THIS MONTH'S COVER

The product line of Peterson Filling Corp., Danville, Ill., a major Midwest custom filler includes nearly all aerosol product types. A pictorial visit to Peterson's plant begins on page 40 of this issue.

OCTOBER, 1957 VOL. 2, No. 10

AEROSOL AGE

The magazine of pressure packaging

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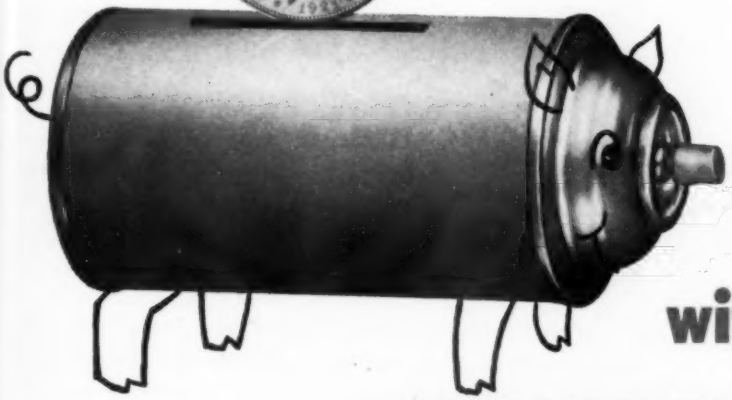

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- ☐ Chloromethane book
- ☐ "Methylene Chloride in Aerosol Production" by Dr. Winston H. Reed
- ☐ "23 Typical Aerosol Formulations Using Methylene Chloride"
- ☐ Sample

Name_____
Position_____
Company_____
Phone_____
Address_____
City_____ Zone____ State_____ EK-10

from the

EDITOR'S MAILBAG

To The Editor:

On the cover of your September issue, you pictured a woman administering medication by means of an aerosol container. At first glance I thought that this was an application of leg make-up, but on reading the description inside, I found it was not.

It occurred to me that aerosol application for leg make-up would be very practical, inasmuch as it would eliminate the streaking effect which results by ordinary applications with a sponge or cotton. Have cosmetic manufacturers used this method of application? If not I think it's a good suggestion.

Dorothy B. Kline
North Wales, Pa.

•

To The Editor:

Do you or any of your readers know where standard cartons for shipping one six, 12, or 16.2-ounce containers can be obtained. The shipping container could be of corrugated material or possibly tube-style cardboard.

A. L. Verssen
VICE-PRESIDENT
JOHN G. MARSHALL MFG. CO. INC.
Brooklyn, N. Y.

We have referred the writer to a number of the leading specialty corrugated container manufacturers in the East. Others offering this particular container may contact Mr. Verssen at the Marshall Co., 167 North Ninth St., Brooklyn 11.

•

To the Editor:

We are happy to tell you that AEROSOL AGE arrived safely and is the most interesting magazine on aerosols we have ever read. As one of the first German firms, (and the sole one in Berlin) which devotes itself solely to private and custom filling, we are keenly interested in all news on aerosols coming from the States.

Our company produces room deodorants and insecticides in six and 18-ounce cans and we are now thinking of enlarging our production.

UNION CHEMIE-ERZEUGNISSE GMBH
Berlin, Germany

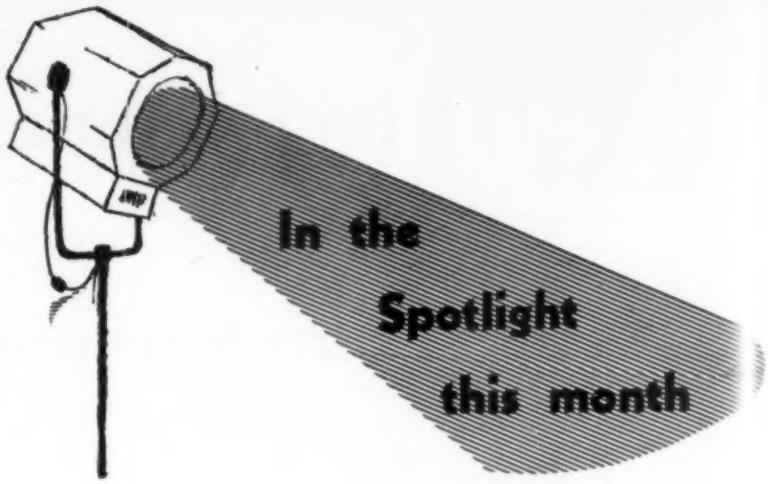
•

To the Editor:

We are about to begin production of aerosol insecticides and, in order to have as few difficulties as possible, would like to import the insecticide concentrate. We wonder whether you could recommend some firms that produce these aerosol concentrates.

SZILARD & CIA. LTD.
Santiago de Chile, Chile

We have recommended the leading insecticide producers in the U. S. to this reader.



● **Aerosol Buyer's Guide—1957-1958** . . . The first buyer's guide and directory devoted exclusively to the pressurized packaging field is the feature of this issue. Alphabetical listings of firms offering components, raw materials, and services begin on page 19.

● **A Pictorial Visit to Peterson Filling** . . . A major Midwest custom filler, in existence just over two years, opens its plant, filling lines, and warehousing facilities to the camera. The company's physical plant is described in detail, in an article beginning on page 40.

● **New Research in the Filling of Food Aerosols** . . . Con-Can research chemists report successful filling of food products through use of conventional aerosol containers and valves.

● **Aerosols in Finland** . . . A small European country, little known for its industrial might, provides new successes for the aerosol. A leading Finnish filler reports on the history and predicts the future of the industry in his country, in an exclusive story on page 45.

● **Aerosol Valves** . . . To go with the Buyer's Guide, Robert A. Foresman, Jr., Philadelphia Aerosol consultant, provides a complete discussion (on page 50) of the needs and pitfalls in selecting valves for various aerosol product types.

● **The Safety Record of the Aerosol Industry** . . . Dr. E. C. Young in a talk before an important fire underwriting association, reports that the aerosol industry has already compiled an admirable record of safety and fire prevention. Summation of his remarks appears on page 58.

● **Pressurized Mothproofing, a Progress Report** . . . Rohm and Haas research reveals some new facts on the effectiveness of pressurized mothproofing formulations.

AEROSOL BUYER'S GUIDE 1957-1958

CONSULTANTS

Aeroprojects, Inc.
310 East Rosedale Street
West Chester, Pa.
OWen 6-4710
(Particle Size Analysis)

Battelle Memorial Institute
505 King Avenue
Columbus, Ohio
(Research)

Chemical Data Co.
52 Park Avenue
New York 17, N. Y.
ORegon 9-1657
(Marketing and Market Studies)

Foster D. Snell
29 West 15th Street
New York 11, N. Y.
WAtkins 4-8800
(Research-Testing-Formulation)

Walter Frank Organization
Elmhurst, Ill.
TErrace 4-0940
(Packaging)

Robert A. Foresman, Jr., Aerosol Consultant
1690 Margaret Street
Philadelphia 24, Pa.
PIoneer 3-0596
(Development—Formulation—Testing—Plant Layout—Customer Service)
Page 84

Arthur D. Little, Inc.
30 Memorial Drive
Cambridge 42, Mass.
(Research)

How to use the Aerosol Buyer's Guide: Where practicable, all components and services have been listed in alphabetical order, except in the case of various equipment categories, which appear under "Equipment." In this category are included can unscramblers, capping equipment, carton packers, container cleaners, coders, conveyors, compressors, ingredient and production line fillers, laboratory equipment, leak detectors, propellant storage and handling systems, pumps, refrigeration equipment, and a general miscellaneous listing.

The page numbers appearing after the company listings indicate advertisements on other pages of the magazine. In these advertisements the reader will be able to find further information about the product line or service offered by the listed firm.

Lodes Aerosol Consultants
730 Fifth Avenue
New York 19, N. Y.
CIrcle 7-3170
(Product Development — Research — Plant Layout)

Moffex Corporation
347 Fifth Avenue
New York 16, N. Y.
MUrray Hill 3-2850
(Plant Layout and Equipment)

Pegasus International Corp.
1 East 53rd Street
New York 22, N. Y.
Plaza 8-2790
(Overseas Representation)

Reed Research Corp.
Mill Street
Shelton, Conn.
REgent 5-4858
(Research—Testing—Product Development)
Page 114

Wisconsin Alumni Research Foundation
P. O. Box 2217-DD
Madison 1, Wisconsin
(Formulation—Labeling—Toxicity Testing)
Page 113

CONTAINERS
(Aluminum)

Bridgeport Brass Co.
Hunter Douglas Division
30 Grand Street
Bridgeport, Conn.
EDison 4-1182

Emson Research, Inc.
118 Burr Court
Bridgeport 5, Conn.
EDison 6-2553
Page 97

Hampton Products Co.
Hester Street
Portland, Pa.
TWin Oaks 7-6103

Hedco
175 Fifth Avenue
New York 10, N. Y.
ALgonquin 4-4334

Peerless Tube Corp.
58 Locust Avenue
Bloomfield, N. J.
PIlgrim 3-5100

Pegasus International Corp.
1 East 53rd Street
New York 22, N. Y.
PLaza 8-2790
(Agents for Pautry Aluminum, Bellegarde (Ain) France)

Ronor Corp.
1360 West Ninth Street
Cleveland, Ohio
MAin 1-5294

Sun Tube Corp.
181 Long Avenue
Hillside, N. J.
WAverly 3-0400
Page 18

Victor Industries
196 Diamond Street
Brooklyn, N. Y.

White Metal Mfg. Co.
1012 Grand Street
Hoboken, N. J.
OLdfield 9-2043

CONTAINERS
(Glass)

Brockway Glass Co., Inc.
Brockway, Pa.
BRockway 3015

Hazel Atlas Glass
Div. of Continental Can Co.
Wheeling, W. Va.

Owens-Illinois Glass Co.
Adams & 14th Streets
Toledo, O.
CHerry 2-6543

Richford Corporation
3618 Oceanside Road
Oceanside, N. Y.
ROckville Centre 6-2366

Wheaton Glass Co.
Millville, N. J.
TAylor 5-1400

CONTAINERS
(Jumbo-Size Metal)

Tube Manifold Corp.
419 Bryant Street
North Tonawanda, N. Y.
LUdlow 7900
Page 105

CONTAINERS
(Plastic)

Colt Manufacturing Co.
Plastics Division
17 Van Dyke Avenue
Hartford, Conn.
JAckson 7-4101

Continental Can Co.
100 East 42nd Street
New York 17, N. Y.
OXford 7-1200
Page 70

Imco Container Corp.
75th & Cleveland Streets
Kansas City, Mo.

National Plastic Products Co.
Odenton, Md.
SOuthfield 6-1000

Precision Valve Corp.
700 Nepperhan Avenue
Yonkers 3, N. Y.
YOnkers 9-6500
Page 49

Richford Corp.
3618 Oceanside Road
Oceanside, N. Y.
ROckville Centre 6-2366

CONTAINERS
(Plastic-Coated Glass)

Wheaton Plastics Co.
Millville, N. J.
TAylor 5-1400

CONTAINERS
(Screw-on Top)

Builders Sheet Metal Works, Inc.
108 Wooster Street
New York 12, N. Y.
CAnal 6-5390

Page 106

CONTAINERS
(Stainless Steel)

Emson Research, Inc.
118 Burr Court
Bridgeport 5, Conn.
EDison 6-2553

Page 97

CONTAINERS
(Tin and Black Plate)

American Can Co.
100 Park Avenue
New York, N. Y.
MUrray Hill 6-4900

Page 81

Continental Can Co.
100 East 42nd Street
New York 14, N. Y.
OXford 7-1200

Page 70

Crown Cork & Seal Co., Inc.
Can Division
9300 Ashton Road
Philadelphia 36, Pa.
ORchard 3-5100

Page 6

COVER CAPS AND CLOSURES

Allied Professional Associates
P. O. Box 233
Buffalo 21, N. Y.
PLaza 8577
(Pharmaceutical only)

Page 110

Clayton Corp.
4205 Forest Park Boulevard
St. Louis 8, Mo.
OLive 3-2260

Page 115

Eastern Cap & Closure Co.
725 N. Haven Street
Baltimore 5, Md.
EAstern 7-5640

Line Novelty Manufacturing Co.
P. O. Box 1386
Waterbury 20, Conn.

Metal Fabrications, Inc.
Waterbury, Conn.

Monroe-Danford & Co.
Lincoln Park, N. J.
Murray Hill 7-1488 (N. Y.)

Pegasus International Corp.
1 East 53rd Street
New York 22, N. Y.
PLaza 8-2790
(Agents for Pautry Aluminum, Bellegarde (Ain) France)

Pharma Plastics Inc.
205 S. Smallwood Street
Baltimore 23, Md.
GIlmore 5-7311

Precision Valve Corp.
700 Nepperhan Avenue
Yonkers 3, N. Y.
YOnkers 9-6500

Page 49

Risdon Mfg. Co.
Naugatuck, Conn.
PArk 9-8231

Page 51

Scott Plastics
410 Windsor Street
Hartford 5, Conn.

Sterling Seal Co.
316 West 16th Street
Erie, Pa.
ERie 4-1568

Sun Tube Corp.
181 Long Avenue
Hillside, N. J.
WAverly 3-0400

Page 18

Valve Corp. of America
1720 Fairfield Avenue
Bridgeport, Conn.
EDison 3-3165

Page 62

Walter Frank Organization
Box 111 C
Elmhurst, Ill.
TErrace 4-0940

West Penn Mfg. & Supply Corp.
809 Second Avenue
Brackenridge, Pa.
ACademy 4-5252

Page 87

Wheeling Stamping Co.
2116 Water Street
Wheeling, W. Va.
CEdar 3-4770

A. H. Wirz, Inc.
Fourth & Townsend Streets
Chester, Pa.
CHester 3-6281

CUSTOM FILLERS

(These companies fill for the trade—many supply filled aerosol products for private labels)

Acrolite Products Inc.
106 Ashland Avenue
West Orange, N. J.
ORange 4-2558

AeriForm Products Co.
23400 Park Street
Dearborn, Mich.
LOgan 3-2102

Aerocide Dispensers Ltd.
P. O. Box 19—Weston
Toronto 15, Ont., Canada

Aerosol Bug Blitzer Co.
10 Dell Park Avenue
Toronto, Ont., Canada

Aerosol Corp. of the South
P. O. Box 148
Arlington, Tenn.
UNiversity 7-2254

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Aerosol Industries
Division of Zenith Drug Corp.
1 Vesey Street
Newark, N. J.
MArket 2-4262

Aerosol Methods
Ridge Road
Tylersport, Pa.
ALpine 7-6032

Page 110

Aerosol of Georgia
913 Boulevard N.E.
Atlanta 8, Ga.

Aerosol Techniques, Inc.
111 Silliman Avenue
Bridgeport, Conn.
EDison 6-0176

Page 4

Aeropack, Inc.
4814 South Richmond St.
Chicago, Ill.
LAfayette 3-5600

Airosol Co., Inc.
525 N. 11th Street
Neodesha, Kans.
Neodesha 149

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Allied Professional Associates
P. O. Box 233
Buffalo 21, N. Y.
PLaza 8577

Page 110

American Aerosol Corp.
889 Gordon Street
Holland, Mich.
EXport 2-3025

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AMR Chemical Co., Inc.
985 East 35th Street
Brooklyn, N. Y.
CLoverdale 3-8300

Page 110

Armstrong Laboratories
421 LaGrange Street
W. Roxbury, Mass.
FAirview 3-7404

Page 110

Associated Brands, Inc.
50 Wallabout Street
Brooklyn, N. Y.
ULster 5-2900

Page 109

G. Barr & Co.
3601 S. Racine Avenue
Chicago, Ill.
YArds 7-1700

Page 78

G. Barr & Co.
850 East 62nd Street
Los Angeles, Calif.

Page 78

G. Barr & Co.
4747 Bronx Boulevard
Bronx, N. Y.

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Bridgeport Brass Co.
East Main Street & Crescent Avenue
Bridgeport, Conn.
EDison 4-1182

Capital Packaging
1441 S. Circle Avenue
Forest Park, Ill.
COlumbus 1-6295

Cardel Enterprises
Bethridge Rd. Rexdale
Toronto, Canada
CHerry 4-1123

Chase Products Co.
Gardener Road
Broadview, Ill.
FIllmore 5-1222

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Chemi-Form Corp.
3707 W. Harrison Street
Chicago, Ill.
SAcramento 2-0990

Cleveland Aerosol Packaging
9801 Harvard Avenue
Cleveland, O.
VUlcan 3-4800

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Connecticut Chemicals (Canada) Ltd.
Curity Avenue & Hellinger Road
Toronto, Ont., Canada
Plymouth 5-5249

Connecticut Chemical Research Corp.
706 Bostwick Avenue
Bridgeport 5, Conn.
FOrest 8-2511

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Continental Filling Corp.
123 Hazel Street
Danville, Ill.
Danville 742

Page 13

Dana Mfg. Co.
2161 N. California Avenue
Chicago, Ill.
SPalding 2-3900

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Esko Chemical Co.
352 Livonia Avenue
Brooklyn, N. Y.
DIckens 2-5205

Page 112

Eveready Pressurized Prod., Inc.
1022 Belt Line Avenue
Cleveland, O.
SHadyside 1-1388

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Fluid Chemical Co., Inc.
878 Mt. Prospect Avenue
Newark, N. J.
HUmboldt 4-1000

Page 109

Fuld Bros., Inc.
702 South Wolfe Street
Baltimore 31, Md.
BRoadway 6-7400

Gabriel Manufacturing Co.
Maple Avenue
Haverstraw, N. Y.
HAverstraw 9-3236

Gard Industries, Inc.
1739 Hardung Road
Northfield, Ill.
Wilmette 7007

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Hampton Products
Hester Street
Portland, Pa.
Twin Oaks 7-6103

Hysan Products Co.
932 West 38th Street
Chicago, Ill.
VIrginia 7-1168

Illinois Bronze Co.
2023 S. Clark Street
Chicago, Ill.

Inland Paint & Chem. Co.
2144 West 49th Street
Chicago, Ill.
VIrginia 7-7511

Kan-Jax Chem. Co.
2500 Summit Avenue
Kansas City, Mo.

Robert J. Kerr Chemicals Inc.
9 So. Fairview Avenue
Park Ridge, Ill.
TAlcott 3-4151

Katona Chemical Co.
435 Wells Street
Bridgeport, Conn.

Kolmar Laboratories
224 Broadway
Milwaukee, Wisc.
BRoadway 3-7984

Kolmar Ltd.
Barrie, Ont., Canada

LaMaur Products, Inc.
520 Plymouth Bldg.
Minneapolis, Minn.

Larson Laboratories
962 West 12th Street
Erie, Pa.

Lawson Chemical Co.
5634 Selmaraine Drive
Culver City, Calif.

Lenk Mfg. Co.
30 Cummington Street
Boston, Mass.
Kenmore 6-9700

The Lenk Co.
Franklin, Ky.
Page 107

McGuire & Co.
833 47th Avenue
Oakland, Calif.

Midwest Consultants, Inc.
5147 Brown Avenue
St. Louis, Mo.

Modern Aire Techniques
Attica, N. Y.
ATtica 777
Page 110

Modern Aire Techniques
1701 Broom Street
Houston, Tex.
Page 110

National Chemical Laboratories, Inc.
420 Monceaux Road
West Palm Beach, Fla.

National Instrument Co.
2701 Rockwood Avenue
Baltimore 15, Md.
FOrest 7-9124

National Spray Can Filling Corp.
1238 East 14th Street
Brooklyn, N. Y.
CLoverdale 2-2730
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Old Empire, Inc.
Mt. Prospect & Verona Ave.
Newark, N. J.
HUmboldt 4-2121
Page 109

Pactra Chemical Co., Inc.
1213 North Highland
Los Angeles 38, Calif.
Hollywood 9-7284

Par Industries, Inc.
2193 East 14th Street
Los Angeles 21, Calif.
TRinity 2668
Page 111

Pennsylvania Engineering Co.
1107-21 N. Howard Street
Philadelphia 23, Pa.
MArket 7-3635

Peterson Filling & Packaging Co.
Danville, Ill.
3rd Cover

Plaze, Inc.
9401 Watson Industrial Park
St. Louis, Mo.
WOodland 1-3564

Powr-Pak, Inc.
647 North Avenue
Bridgeport, Conn.
FOrest 7-6495
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Private Brands
300 S. Third Street
Kansas City, Mo.

Products Mfg. Corp.
135 Stevens Avenue
Little Falls, N. J.
LIttle Falls 4-1910
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Prestige Laboratories Inc.
Box 821
York, Pa.

Puritan Dist. Co.
160 Washington Street N.
Boston, Mass.
RIchmond 2-3318
Page 110

Pressure Products Co.
Box 342
West Chester, Pa.
OWen 6-3

Rand Aerosol
2626 S. Dearborn Street
Chicago, Ill.
CAlumet 5-2866

Red Lion Chemical Co.
146 N. Charles St.
Red Lion, Pa.
(Paint Only)

Regal Chemical Corp.
115 Dobbin Street
Brooklyn 22, N. Y.
EVergreen 9-8727

Rex Research Corp.
Toledo, O.

Ronor Corp.
Div. of Engine Parts Mfg. Co.
1360 West 9th Street
Cleveland, O.
MAin 1-5294

Gene Rose Co., Inc.
1637 S. Kilbourn Avenue
Chicago, Ill.
LAwndale 1-7000

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Shield Chemical Co.
50 Brook Road
Needham Heights, Mass.
NEedham 3-1433

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Southeastern Packaging Co.
P. O. Box 8057
Madiera Beach
St. Petersburg, Fla.

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Sprayon Products Co.
2075 East 65th Street
Cleveland, O.
HEnderson 2-2900

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Spray Mist, Inc.
2280 Flatbush Avenue
Brooklyn, N. Y.

Sprayway, Inc.
1200 N.W. 23rd Avenue
Fort Lauderdale, Fla.
JAckson 4-2545

Stalfort Pressure-Pak Corp.
321 W. Pratt Street
Baltimore 1, Md.
SAratoga 7-4760

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Strobel Products, Inc.
2609 Congress St.
Louisville, Ky.
SPring 2-2705

Strouse, Inc.
Main & Astor Streets
Norristown, Pa.
BRoadway 2-2211

Super-Pack Corp.
380 Norway Street
York, Pa.
YOrk 2-1433

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John Struthers & Co. Ltd.
5581 Pare Street
Montreal, Canada
RIverside 8-7623

Sun Lac Inc.
274 Lafayette Street
Newark 5, N. J.
MArket 3-7727

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Texas Aerosols, Inc.
201 Velasco Street
Houston 3, Tex.
CA 2-0338

Texas Rice Oils Corp.
5245 Ashbrook Street
Houston, Tex.

Thomasson of Pa., Inc.
Washington & Ford Streets
Norristown, Pa.

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Titan Chemical Industries, Inc.
401 East Filmore
Colorado Springs, Colo.

Virginia Smelting Co.
West Norfolk, Va.

Western Filling Corp.
4151 Bandini Boulevard
Los Angeles 23, Calif.
ANgelus 2-4168

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Whitmire Research Labs., Inc.
339 S. Vanderventer Street
St. Louis, Mo.

DIP TUBING

Anasite
3575 Toughy Avenue
Skokie, Ill.

Anchor Plastics
30-36 36th Street
Long Island City, N. Y.
RAvenswood 9-1494

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Hydrawlik Co.
131 East First Avenue
Roselle, N. J.
CHestnut 5-0368

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Jordan Manufacturing Co.
Des Plaines, Ill.
VAnderbilt 4-4121

EMULSIFIERS

Antara Chemicals Division
General Aniline & Film Corp.
435 Hudson Street
New York 14, N. Y.
WAtkins 4-0600

Atlas Powder Co.
Chemicals Division
Wilmington, Del.
OLympia 8-6511

Emulsol Corp.
75 E. Wacker Drive
Chicago, Ill.
FInancial 6-2960

Knapp Products, Inc.
Lodi, N. J.
PRescott 9-6945

Ninol Laboratories Inc.
1719 So. Clinton Street
Chicago 16, Ill.

Nopco Chemical Co.
Langdon & Potter Streets
Harrison, N. J.

Sole Chemical Corp.
27 E. Monroe Street
Chicago 3, Ill.

EQUIPMENT

CAN UNSCRAMBLERS

Alpha Engineering & Machine Works
800 West Central Avenue
Mt. Prospect, Ill.
CLearbrook 3-2800

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Chisholm-Ryder Co. of Pennsylvania
Blettner Avenue
Hanover, Pa.
MElrose 7-2123

Dudley Machinery Corp.
Mountain View, Calif.

Food Machinery & Chemical Corp.
Anderson-Barngrover Division
San Jose 6, Calif.

Mojonnier Associates Inc.
9151 Fullerton Avenue
Franklin Park, Ill.
GLadstone 5-1013

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Island Equipment Corp.
27-01 Bridge Plaza North
Long Island 1, N. Y.

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U. S. Bottlers Machinery Co.
4017 North Rockwell Street
Chicago 18, Ill.

CAPPING EQUIPMENT

Arenco Machine Co.
25 West 43rd Street
New York 36, N. Y.
BRyant 9-9250

Builders Sheet Metal Works, Inc.
108 Wooster Street
New York 12, N. Y.
CAnal 6-5390

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Burt Machine Co.
401 E. Oliver Street
Baltimore 2, Md.
SAratoga 7-2120

Consolidated Packaging Machinery Corp.
1400 West End
Buffalo 13, N. Y.

Page 94

Resina Automatic Machinery Co. Inc.
572 Smith Street
Brooklyn 31, N. Y.

Scientific Filter Co.
57 Rose Street
New York 38, N. Y.
BEekman 3-1210

CARTON PACKERS

E. L. Bivans, Inc.
2431 Dallas Street
Los Angeles 31, Calif.

Burt Machine Co.
401 E. Oliver Street
Baltimore 2, Md.
SAratoga 7-2120

Chisholm-Ryder Co. of Pennsylvania
Blettner Avenue
Hanover, Pa.
MElrose 7-2133

Clybourn Machine Corp.
6479 N. Avondale
Chicago 31, Ill.

J. L. Ferguson Co.
Joliet 3, Ill.

Pneumatic Scale Corp ,
North Quincy, Mass.

Stokes & Smith Co.
4915 Summerdale Avenue
Philadelphia, Pa.

Triangle Package Machinery Co.
6633 West Diversey Boulevard
Chicago, Ill.

CONTAINER CLEANING EQUIPMENT

Alpha Engineering & Machine Works, Inc.
800 West Central Avenue
Mt. Prospect, Ill.
CLearbrook 3-2800

Page 115

Chisholm-Ryder Co. of Pennsylvania
Bletter Avenue
Hanover, Pa.
MElrose 7-2123

Continental Can Co.
100 East 42nd Street
New York 14, N. Y.
OXford 7-1200

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Food Machinery & Chemical Corp.
Anderson-Barngrover Division
San Jose 6, Calif.

Hope Machine Co.
9400 State Road
Philadelphia 4, Pa.
MAyfair 4-7271

The Karl Kiefer Machine Co.
Cincinnati 2, O.

Mojonnier Associates Inc.
9151 Fullerton Ave.
Franklin Park, Ill.
GLadstone 5-1013

Page 11

U. S. Bottlers Machinery Co.
4023 North Rockwell Street
Chicago 18, Ill.
IRving 8-0263

CODING DEVICES

Adolph Gottscho Inc.
6 Evans Terminal
Hillside, N. J.
ELizabeth 2-9557

Hope Machine Co.
9400 State Road
Philadelphia 14, Pa.
MAyfair 4-7271

Kiwi Coders Corp.
3804 N. Clark Street
Chicago, Ill.
GRaceland 7-2270

Page 116

B. Verner & Co., Inc.
52 Duane Street
New York 7, N. Y.
BA 7-1466

Mojonnier Associates Inc.
9151 Fullerton Avenue
Franklin Park, Ill.
GLadstone 5-1013

Page 11

John R. Nalback Eng. Co.
6139 Ogden Avenue
Chicago 50, Ill.

E. L. Bivans, Inc.
2431 Dallas Street
Los Angeles 31, Calif.

American Marking Corp.
71 Lock Street
Newark 1, N. J.

Industrial Marking Equipment
454 Baltic Street
Brooklyn 17, N. Y.

COMPRESSORS

Alpha Engineering & Machine Works, Inc.
800 West Central Avenue
Mt. Prospect, Ill.
CLearbrook 3-2800
Page 115

Brunner Manufacturing Co.
Utica, N. Y.

Chicago Pneumatic Co.
8 East 44th Street
New York 17, N. Y.

Gardner-Denver
Quincy, Ill.

Ingersoll-Rand
11 Broadway
New York 4, N. Y.

Norwalk Co., Inc.
South Norwalk, Conn.

The Wallace Co.
41 California Street
Bridgeport, Conn.
EDison 6-1141
Page 56

CONVEYORS

Alpha Engineering & Machine Works, Inc.
800 West Central Avenue
Mt. Prospct, Ill.
CLearbrook 3-2800
Page 115

Island Equipment Corp.
27-01 Bridge Plaza North
Long Island City 1, N. Y.
Page 116

Jeffrey Manufacturing Co.
Columbus 16, O.

Link-Belt Co.
Prudential Plaza
Chicago 1, Ill.

Mojonnier Associates Inc.
9151 Fullerton Avenue
Franklin Park, Ill.
GLadstone 5-1013
Page 11

INGREDIENT FILLERS

Arthur Colton Co.
Division of Snyder Tool & Eng. Co.
3400 E. Lafayette
Detroit 7, Mich.

Elgin Manufacturing Co.
200 Brook Street
Elgin, Ill.

Food Machinery & Chemical Corp.
Anderson-Barngrover Division
San Jose 6, Calif.

Hope Machine Co.
9400 State Road
Philadelphia 14, Pa.
MAyfair 4-7271

The Karl Kiefer Machine Co.
Cincinnati 2, O.

Mojonnier Associates Inc.
9151 Fullerton Avenue
Franklin Park, Ill.
GLadstone 5-1013
Page 11

MRM Co., Inc.
191 Berry Street
Brooklyn 11, N. Y.

Packer Machinery Co.
109 14th Street
Brooklyn 15, N. Y.
HU 9-8850

The Pfaudler Co.
West Ave. and Clark Street
Rochester, N. Y.

Scientific Filter Co.
57 Rose Street
New York, N. Y.
BE 3-1210

U. S. Bottlers Machine Co.
4017 North Rockwell Street
Chicago 18, Ill.

PRODUCTION FILLING LINES

Alpha Engineering & Machine Works
800 W. Central Avenue
Mt. Prospect, Ill.
CLearbrook 3-2800
(Pressure & Cold)
Page 115

Builders Sheet Metal Works Inc.
108 Wooster Street
New York 12, N. Y.
CAnal 6-5390
(Small production cold fill)
Page 106

J. G. Machine Works
452 West 46th Street
New York 36, N. Y.
CIrcle 6-6373
(Pressure only)

Page 89

The Karl Kiefer Machine Co.
Cincinnati 2, O.
(Pressure—production expected late in '57)

Moffex Corp.
347 Fifth Avenue
New York 16, N. Y.
(pressure & cold)

Mojonnier Associates, Inc.
9151 Fullerton Avenue
Franklin Park, Ill.
GLadstone 5-1013
(pressure & cold)

Page 11

Oil Equipment Laboratories
600 Pearl Street
Elizabeth, N. J.
ELizabeth 4-3900
(pressure only)

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LABELERS

Burt Machine Co.
401 E. Oliver Street
Baltimore 2, Md.
SAratoga 7-2120

Standard Knapp Div.
Portland, Conn.

Chisholm-Ryder Co. of Pennsylvania
Blettner Avenue
Hanover, Pa.
MElrose 7-2133

Globe Ticket Co.
112 North 12th Street
Philadelphia 7, Pa.
LOcust 7-2800

Labelette Co.
2611 D. Leland Avenue
Chicago 25, Ill.
COrnelia 7-3442

MRM Co., Inc.
191 Berry Street
Brooklyn 11, N. Y.

Scientific Filter Co.
57 Rose Street
New York, N. Y.
BE 3-1210

Potdevin Machine Co.
200 North Street
Teterboro, N. J.

LABORATORY FILLING EQUIPMENT

Aer-O-Fil Engineering Corp.
41 California Street
Bridgeport, Conn.
EDison 6-1141

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Alpha Engineering & Machine Wks., Inc.
800 West Central Road
Mt. Prospect, Ill.
CLearbrook 3-2800

Page 115

Builders Sheet Metal Works
108 Wooster Street
New York 12, N. Y.
CAnal 6-5390

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Druk-Pak Inc.
36 Merkurstrasse
Zurich, Switzerland

Page 116

Robert A. Foresman, Jr.
Apparatus Division
1690 Margaret Street
Philadelphia 24, Pa.
PIoneer 3-0596

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Mojonnier Associates, Inc.
9151 Fullerton Avenue
Franklin Park, Ill.
GLadstone 5-1013

Page 11

LABORATORY EQUIPMENT

(Miscellaneous)

Alpha Engineering & Machine Works, Inc.
800 West Central Avenue
Mt. Prospect, Ill.
CLearbrook 3-2800

Page 115

Beckman Instrument Inc.
2500 Fullerton Road
Fullerton, Calif.
LAmbert 5-8241
(gas chromatograph)

The Bete Fog Nozzle Inc.
Greenfield, Mass.
(spray counter)

Builders Sheet Metal Works, Inc.
108 Wooster Street
New York 12, N. Y.
CAnal 6-5390

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Chicago Apparatus Co.
1735 North Ashland Avenue
Chicago 22, Ill.
BRunswick 8-4630
(gas chromatograph)

Fischer & Porter
111 Warminster Road
Hatboro, Pa.
OSborne 5-6000, Ext. 450
(aerosol compatibility tube)

Robert A. Foresman, Jr.
Apparatus Division
1690 Margaret Street
Philadelphia 24, Pa.
PIoneer 3-0569

Page 84

LeMay Machine Co.
St. Louis, Mo.
(Gasser-shaker)

Phoenix Precision Instrument Co.
3803 N. Fifth Street
Philadelphia 40, Pa.
(Device for measuring & recording aerosol dust & smoke concentrations)

C. A. Spalding Co.
2242 East Vanango Street
Philadelphia 34, Pa.
CUmberland 8-2021
(cap clinching machines)

LEAK DETECTING EQUIPMENT (Electronic)

General Electric Co.
1 River Road
Schenectady, N. Y.

(Hot Water Test Tanks)

Aer-O-Fil Engineering Corp.
41 California Street
Bridgeport, Conn.
EDison 6-1141

Page 56

Alpha Engineering & Machine Works, Inc.
800 W. Central Avenue
Mt. Prospect, Ill.
CLearbrook 3-2800

Page 115

Builders Sheet Metal Works, Inc.
108 Wooster Street
New York 12, N. Y.
CAnal 6-5390

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Island Equipment Corp.
2701 Bridge Plaza North
Long Island City 1, N. Y.

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Mojonnier Associates, Inc.
9151 Fullerton Avenue
Franklin Park, Ill.
GLadstone 5-1013

Page 11

PROPELLANT STORAGE & HANDLING SYSTEMS

Aer-O-Fil Engineering Corp.
41 California Street
Bridgeport, Conn.
EDison 6-1141

Page 56

Doyle & Roth Manufacturing Co.
136 24th Street
Brooklyn 32, N. Y.

Mojonnier Associates, Inc.
9151 Fullerton Ave.
Franklin Park, Ill.
GLadstone 5-1013

Page 11

York Ice Machine Co.
York, Pa.

PUMPS

Alpha Engineering & Machine Works, Inc.
800 West Central Avenue
Mt. Prospect, Ill.
CLearbrook 3-2800

Page 115

Aer-O-Fil Engineering Corp.
41 California Street
Bridgeport, Conn.
EDison 6-1141

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Aurora Pump Division
The New York Air Brake Corp.
62 Loucks Street
Aurora, Ill.

Ertel Engineering Corp.
Kingston 8, N. Y.

The La Bour Co., Inc.
Elkhart, Ind.

Mojonnier Associates, Inc.
9151 Fullerton Avenue
Franklin Park, Ill.
GLadstone 5-1013

Page 11

REFRIGERATION EQUIPMENT

Aer-O-Fil Engineering Corp.
41 California Street
Bridgeport, Conn.
EDison 6-1141

Page 56

Arctic Engineering Corp.
2815 W. Montrose Street
Chicago, Ill.
JUniper 8-6606

H. Loeb & Son
4600 Lancaster Avenue
Philadelphia, Pa.

Mojonnier Associates, Inc.
9151 Fullerton Avenue
Franklin Park, Ill.
GLadstone 5-1013

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WEIGHERS & CLASSIFIERS

Exact Weight Scale Co.
528 E. Town Street
Columbus, O.
CApital 4-6187

Mojonnier Associates, Inc.
9151 Fullerton Avenue
Franklin Park, Ill.
GLadstone 5-1013

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MISCELLANEOUS EQUIPMENT

(Aerosol Dispensing Devices Automatic)

Syncro-Mist Controls, Inc.
170 Madison Avenue
New York, N. Y.
MUrray Hill 5-4650

(Wall Holder)

Ideal Plastics Corp.
184-10 Jamaica Avenue
HOllis 7, N. Y.

(Agitator Pellet Feeders)

Mojonnier Associates, Inc.
9151 Fullerton Avenue
Franklin Park, Ill.
GLadstone 5-1013

Page 11

(Machine for Applying Flowed Gaskets)

Dewey & Almy Chemical Co.
62 Whittemore Avenue
Cambridge, Mass.

(Tube Inserting Devices)

Chase Equipment Corp. of N. Y.
47 East 19th Street
New York 3, N. Y.
ORegon 7-3220

Mojonnier Associates, Inc.
9151 Fullerton Avenue
Franklin Park, Ill.
GLadstone 5-1013

Page 11

(Valve Feeder & Inserter)

Mojonnier Associates, Inc.
9151 Fullerton Avenue
Franklin Park, Ill.
GLadstone 5-1013

Page 11

ESSENTIAL OILS—
See "Perfuming Materials"

GASKETS, FLOWED, CONTRACT APPLICATION

Bristol Flowed Gasket Co.
P. O. Box 382
Southington, Conn.

Handy Button Machine Co.
2255 S. Rockwell Street
Chicago, Ill.
BIshop 7-7400

GIBBERELLIC ACID

Abbott Laboratories-Chemical Sales Division
N. Chicago, Ill.
DExter 6-3080

Agricultural Biologicals Corp.
35 Wilbur Stret
Lynbrook, L. I.
LYnbrook 3-7000

Eli Lilly & Co.
Agricultural & Industrial Division
740 S. Alabama Street
Indianapolis 6, Ind.

Merck & Co.
Chemical Division
Rahway, N. J.
RAhway 7-1200
Page 17

S. B. Penick & Co.
50 Church Street
New York 8, N. Y.
CO 7-1970

Chas. Pfizer & Co.
630 Flushing Avenue
Brooklyn 6, N. Y.

Velsicol Chemical Corp.
330 E. Grand Avenue
Chicago 11, Ill.
DElaware 7-7383
Page 69

INSECT REPELLENTS

Glenn Chemical Co.
2735 N. Ashland Avenue
Chicago 14, Ill.
(Tabutrex)
Page 106

R. W. Greeff & Co.
10 Rockefeller Plaza
New York 20, N. Y.
(Diethyl Toluamide)

Hercules Powder Co.
970 Market Street
Wilmington 99, Del.
(Diethyl Toluamide)

McLaughlin Gormley King Co.
1715 S.E. Fifth Street
Minneapolis, Minn.
(MGK Repellent 11, MGK Repellent 326)
Page 93

Union Carbide Chemicals Co.
Div. Union Carbide Corp.
30 East 42nd Street
New York 17, N. Y.
(Crag Fly Repellent)

INSECTICIDE TOXICANTS

American Cyanamid Co.
30 Rockefeller Plaza
New York 20, N. Y.
(Malathion)

Chemical Insecticide Corp.
30 Whitman Avenue
Metuchen, N. J.
LIberty 9-2300
(Rotenone resins)
Page 82

E. I. du Pont de Nemours & Co. (Inc.)
Wilmington 98, Del.
Grasselli Chemicals Dept.
(Methoxychlor)
Page 66

Fairfield Chemical Div.
Food Machinery & Chemical Corp.
441 Lexington Avenue
New York 17, N. Y.
OXford 7-1940
(Pyrethrum Concentrates, Rotenone Resins, and Synergists)
4th Cover

Geigy Chemical Co.
P. O. Box 450
Yonkers, N. Y.
(Methoxychlor, DDT)
Page 88

B. F. Goodrich Chemical Co.
3135 Euclid Avenue
Cleveland, O.
UTah 1-8200
(Strobane)

Hercules Powder Co.
984 Market Street
Wilmington 99, Del.
OLympia 8-7211
(Thanite)

Olin Mathieson Chemical Corp.
10 Light Street
Baltimore, Md.
PLaza 2-8300
(Pyrethrum, Synergists, Rotenone Resins, and DDT)

McLaughlin Gormley King Co.
1715 S.E. Fifth Street
Minneapolis, Minn.
(Pyrethrum and Synergists)
Page 93

S B. Penick & Co.
50 Church Street
New York 8, N. Y.
COlumbus 7-1970
(Pyrethrum, Synergists and Rotenone Resins)

Prentiss Drug & Chemical Co.
101 West 31st Street
New York 1, N. Y.
PEnnsylvania 6-6766
(Pyrethrum, Synergists and Rotenone Resins)
Page 7

Rohm & Haas Co.
222 N. Washington Square
Philadelphia 5, Pa.
LOcust 3-9860
(Lethane and Perthane)

Page 96

Shell Chemical Corp.
380 Madison Avenue
New York 17, N. Y.
JUdson 6-5000

Velsicol Chemical Corp.
330 E. Grand Avenue
Chicago 11, Ill.
DElaware 7-7383
(Chlordane)

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LABEL AND PACKAGE DESIGN

(All the major can companies maintain art staffs to assist their customers.)

Donrico Inc.
438 West 37th Street
New York 18, N. Y.
WIsconsin 7-7828

A. H. Wirz, Inc.
Fourth & Townsend Sts.
Chester, Pa.
CHester 3-6281

LANOLIN AND LANOLIN DERIVATIVES

American Cholesterol Products, Inc.
Talmage Road
Edison, N. J.
LIberty 8-6600

Page 98

Croda, Inc.
15 East 26th Street
New York 10, N. Y.
MUrray Hill 3-3089

Page 111

N. I. Malmstrom & Co.
147 Lombardy Street
Brooklyn 22, N. Y.
EVergreen 8-7626

Page 100

Robinson Wagner Co.
110 East 42nd Street
New York City, N. Y.

NYLON RESINS (for manufacture of plastic containers)

E. I. du Pont de Nemours & Co.
Polychemicals Division
Wilmington 98, Del.
OLympia 4-5121

ODOR NEUTRALIZERS

Alpine Aromatics
398 Main Street
Metuchen, N. J.
LIberty 8-7202
(Namee)

Page 95

International Wax Refining Co.
99 E. Hawthorne Avenue
Valley Stream, N. Y.
(Intasol)

Molecular Laboratories
45 Sunrise Highway
Lynbrook, N. Y.
LYnbrook 9-7880

Motomco, Inc.
Terminal Avenue
Clark, N. J.
FUlton 1-3033
(Metazene)

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Prentiss Drug & Chemical Co.
101 West 31st Street
New York 1, N. Y.
PEnnsylvania 6-6766
(Meelium)

Page 7

Solvay Process Div.
Allied Chemical & Dye Corp.
61 Broadway
New York 6, N. Y.
HAnover 2-7300
(Ozene)

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PERFUMING & ODORIZING MATERIALS

Alpine Aromatics
398 Main Street
Metuchen, N. J.
LIberty 8-7202

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W. J. Bush & Co., Inc.
137 Boston Post Road
Cos Cob, Conn.

Ph. Chaleyer, Inc.
160 East 56th Street
New York, N. Y.

Antoine Chiris Co.
212 East 23rd Street
New York, N. Y.

Compagnie Parento, Inc.
Croton-on-Hudson
New York

De Laire, Inc.
242 West 30th Street
New York 1, N. Y.
CHickering 4-7455

Dodge & Olcott, Inc.
180 Varick Street
New York 14, N. Y.
WAtkins 4-3600

Page 59

Dragoco, Inc.
250 West Broadway
New York 13, N. Y.
CAnal 6-5813

P. R. Dreyer Inc.
601 West 26th Street
New York 1, N. Y.
WAtkins 9-1570

Felton Chemical Co.
599 Johnson Avenue
Brooklyn, N. Y.
HYacinth 7-4464

Firmenich, Inc.
250 West 18th Street
New York 11, N. Y.
WAtkins 9-5520

Florasynth Laboratories, Inc.
900 Van Nest Avenue
New York 62, N. Y.
TAlmadge 8-6000

Page 102

Fries & Fries
110 East 70th Street
Cincinnati, Ohio
VAlley 1-7200

Fritzsche Brothers, Inc.
76 9th Avenue
New York 11, N. Y.
WAverly 9-4100

Page 91

Givaudan-Delawanna, Inc.
330 West 42nd Street
New York, N. Y.
LAckawanna 4-6500

Page 61

Heine & Co.
601 West 26th Street
New York 1, N. Y.
ORegon 5-9039

Knapp Products, Inc.
Lodi, N. J.
PRescott 9-6945

Magnus, Mabee & Reynard, Inc.
16 Desbrosses Street
New York 13, N. Y.
WAlker 5-1110

Page 10

Norda Essential Oil & Chemical Co.
601 West 26th Street
New York 1, N. Y.
WAtkins 4-7878

Orbis Products Corp.
601 West 26th Street
New York 1, N. Y.
WAtkins 4-7660

S. B. Penick & Co.
50 Church Street
New York, N. Y.
COrtland 7-1970

Perry Brothers
61-12 32nd Avenue
Woodside 77, Long Island, N. Y.
RAvenswood 1-3636

Polak & Schwarz, Inc.
667 Washington Street
New York 14, N. Y.
WAtkins 4-5570

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Polak's Frutal Works
667 Washington Street
New York 14, N. Y.
WAtkins 4-5570

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Rhodia, Inc.
230 Park Avenue
New York, N. Y.
PLaza 3-4850

Page 14

Roubechez, Inc.
8 East 12th Street
New York 3, N. Y.
ALgonquin 5-7262

Roure-Dupont, Inc.
366 Madison Avenue
New York, N. Y.
VAnderbilt 6-5830

Schimmel & Co.
601 West 26th Street
New York 1, N. Y.
WAtkins 4-1393

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Standard Aromatics
88 University Place
New York, N. Y.
ORegon 5-4333

Synfleur Scientific Laboratories
Monticello, N. Y.
Monticello 84

Syntomatic Corp.
114 East 32nd Street
New York 16, N. Y.
MUrray Hill 3-7618

Tombarel Products Corp.
725 Broadway
New York 3, N. Y.
GRamercy 7-4530

Ungerer & Co.
161 Ave. of the Americas
New York 13, N. Y.
ALgonquin 5-4660

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Van Ameringen-Haebler, Inc.
521 West 57th Street
New York, N. Y.
CIrcle 6-2700

Pages 72-73

Van Dyk & Co.
11 William Street
Belleville, N. J.
PLymouth 9-3225

Albert Verley & Co.
1375 E. Linden Avenue
Linden, N. J.
WAbash 5-1105

Verona Chemical Co.
26 Verona Avenue
Newark 4, N. J.

PROPELLANTS

(Fluorinated Hydrocarbons)

E. I. du Pont de Nemours & Co.
Freon Products Division
Wilmington 98, Del.
OLympia 4-5121

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General Chemical Div., Allied Chemical & Dye Corp.
40 Rector Street
New York 6, N. Y.
HAnover 2-7300

Pages 54-55

Pennsalt Chemicals Corp.
3 Penn Center Plaza
Philadelphia 2, Pa.
LOcust 4-4700

(Methylene Chloride)

Dow Chemical Co.
Midland, Mich.

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E. I. du Pont de Nemours & Co.
Electro Chemicals Dept.
Wilmington 98, Del.
OLympia 4-5121

Solvay Process Division
Allied Chemical & Dye Corp.
61 Broadway
New York 6, N. Y.
HAnover 2-7300

Page 15

(Soluble Gases)

Nitrous Oxide and Nitrous Oxide-Carbon Dioxide Mixes

Ohio Chemical & Surgical Equipment Co.
1400 E. Washington Avenue
Madison 10, Wisc.

Page 12

S. S. White Dental Mfg. Co.
211 S. 12th Street
Philadelphia 5, Pa.
WAlnut 3-1621

Page 106

(Butane and Propane)

Phillips Petroleum Co.
Special Products Division
Bartlesville, Okla.

SHELLAC

Bradshaw Praeger & Co.
3248 West 47th Place
Chicago 32, Ill.
LAfayette 3-2050

Gillespie-Rogers-Pyatt Co.
75 West Street
New York 6, N. Y.
WHitehall 3-9740

Mac-Lac Co.
33 Rector Street
New York 6, N. Y.
WHitehall 3-5230

Mantrose Corporation
1 Hanson Place
Brooklyn 1, N. Y.
STerling 8-1400

F. H. Paul & Stein Brothers
235 5th Avenue
New York, N. Y.
MUrray Hill 4-6370

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William Zinsser & Co.
516 West 59th Street
New York 19, N. Y.
COlumbus 5-2800

MISCELLANEOUS RAW MATERIALS (Antibiotics)

Lederle Laboratories Division
American Cyanamid Co.
Pearl River, N. Y.

Wallerstein Co.
180 Madison Avenue
New York, N. Y.
LExington 2-8730

Page 102

(Carboxymethyl Cellulose)

The Dow Chemical Co.
Midland, Mich.
TEmple 2-2311

Page 9

Hercules Powder Co.
Delaware Trust Bldg.
Wilmington, Del.

Pharmaceuticals (antioxidants & bacteriostats)

Catalin Corporation of America
One Park Avenue
New York 16, N. Y.
MUrray Hill 3-2100

(Polyvinyl Pyrollidone)

General Aniline & Film Corp.
435 Hudson Street
New York 14, N. Y.
WAverly 4-0600

(Trichloroethane)

Dow Chemical Co.
Midland, Mich.
Temple 2-2311

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Union Carbide Chemicals Co.
Division of Union Carbide Corp.
30 East 42nd Street
New York 17, N. Y.

Merchants Chemical Co.
60 East 42nd Street
New York, N. Y.

VALVES, AEROSOL (General Purpose)

Aerosol Research Co.
743 S. Circle Avenue
Forest Park, Ill.

Page 3

DeMert & Dougherty, Inc.
3001 West 47th Street
Chicago, Ill.
Lafayette 3-5600

Illinois Tool Works—Fastex Division
195 Algonquin Road
Des Plaines, Ill.
VAnderbilt 7-2121
(production expected 1958)

Newman Green, Inc.
507 Interstate Road
Addison, Ill.
TErrace 2-1000

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Oil Equipment Laboratories, Inc.
600 Pearl Street
Elizabeth, N. J.
Elizabeth 4-3900

Page 8

Precision Valve Corp.
700 Nepperhan Avenue
Yonkers 3, N. Y.
YOnkers 9-6500

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Risdon Manufacturing Co.
Naugatuck, Conn.
PArk 9-8231

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A. Schrader's Son
Div. Scovill Mfg. Co., Inc.
470 Vanderbilt Ave.
Brooklyn, N. Y.

Seaquist Manufacturing Corp.
First Street
Carey, Ill.
SPring 4-5100-Chicago

Sun Tube Corp.
181 Long Avenue
Hillside, N. J.
WAverly 3-0400

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Valve Corporation of America
1720 Fairfield Avenue
Bridgeport, Conn.
EDison 3-3165

Pages 62-63

VALVES, AEROSOL (Foam)

Aerated Container Corp.
Dairy Whipt Division
39 So. LaSalle Street
Chicago, Ill.
CEntral 6-7460

Aerosol Research Co.
743 S. Circle Avenue
Forest Park, Ill.

Page 3

Clayton Corp.
4205 Forest Park Boulevard
St. Louis 8, Mo.
OLive 3-2260

Page 115

Illinois Tool Works—Fastex Division
195 Algonquin Road
Des Plaines, Ill.
VAnderbilt 7-2121
(production expected 1958)

LeMay Machine Co.
St. Louis, Mo.

Newman-Green, Inc.
507 Interstate Road
Addison, Ill.
TErrace 2-1000

Page 86

Oil Equipment Laboratories, Inc.
600 Pearl Street
Elizabeth, N. J.
ELizabeth 4-3900

Page 8

Precision Valve Corp.
700 Nepperhan Avenue
Yonkers 3, N. Y.
YOnkers 9-6500

Page 49

Risdon Manufacturing Co.
Naugatuck, Conn.
PArk 9-8231

Page 51

Seaquist Manufacturing Corp.
First Street
Carey, Ill.
SPring 4-5100-Chicago

Sun Tube Corp.
181 Long Avenue
Hillside, N. J.
WAverly 3-0400

Page 18

Valve Corp. of America
1720 Fairfield Avenue
Bridgeport, Conn.
EDison 3-3165

Pages 62, 63

VALVES, AEROSOL (Glass and Plastic Bottle)

Aerosol Research Co.
743 S. Circle Avenue
Forest Park, Ill.

Page 3

Newman-Green, Inc.
507 Interstate Road
Addison, Ill.
TErrace 2-1000

Page 86

Precision Valve Corp.
700 Nepperhan Avenue
Yonkers 3, N. Y.
YOnkers 9-6500

Page 49

Risdon Manufacturing Co.
Naugatuck, Conn.
PArk 9-8231

Page 51

Valve Corp. of America
1720 Fairfield Avenue
Bridgeport, Conn.
EDison 3-3165

Pages 62, 63

VALVES, AEROSOL (Mechanical Break-Up)

Aerosol Research Co.
743 S. Circle Avenue
Forest Park, Ill.

Page 3

Newman Green Inc.
507 Interstate Road
Addison, Ill.
TErrace 2-1000

Page 86

Precision Valve Corp.
700 Nepperhan Avenue
Yonkers 3, N. Y.
YOnkers 9-6500

Page 49

Risdon Manufacturing Co.
Naugatuck, Conn.
PArk 9-8231

Page 51

Valve Corp. of America
1720 Fairfield Avenue
Bridgeport, Conn.
EDison 3-3165

Page 62, 63

VALVES, AEROSOL (Metered)

Dill Manufacturing Co.
700 East 82nd Street
Cleveland, O.
Utah 1-3200

Emson Research Inc.
22 Burr Court
Bridgeport, Conn.

Page 97

Hampton Products Co.
Hestor Street
Portland, Pa.
Twin Oaks 7-6103

Illinois Tool Works—Fastex Division
195 Algonquin Road
Des Plaines, Ill.
VAnderbilt 7-2121
(Production expected 1958)

Newman-Green, Inc.
507 Interstate Road
Addison, Ill.
TErrace 2-1000

Page 86

Risdon Manufacturing Co.
Naugatuck, Conn.
PArk 9-8231

Page 51

Valve Corp. of America
1720 Fairfield Avenue
Bridgeport, Conn.
EDison 3-3165

Pages 62, 63

VALVES, AEROSOL (Paint)

Aerosol Research Co.
743 S. Circle Avenue
Forest Park, Ill.

Page 3

Newman Green Inc.
507 Interstate Road
Addison, Ill.
TErrace 2-1000

Page 86

Oil Equipment Laboratories, Inc.
600 Pearl Street
Elizabeth, N. J.
ELizabeth 4-3900

Page 8

Precision Valve Corp.
700 Nepperhan Avenue
Yonkers 3, N. Y.
YOnkers 9-6500

Page 49

Risdon Manufacturing Co.
Naugatuck, Conn.
PArk 9-8231

Page 51

Seaquist Manufacturing Corp.
First Street
Carey, Ill.
SPring 4-5100 (Chicago)

Sprayon Products Co.
2075 East 65th Street
Cleveland, O.

Page 47

Sun Tube Corp.
181 Long Avenue
Hillside, N. J.
WAverly 3-0400

Page 18

Valve Corporation of America
1720 Fairfield Avenue
Bridgeport, Conn.
EDison 3-3165

Page 62, 63

VALVES, AEROSOL (One-Shot)

Oil Equipment Laboratories, Inc.
600 Pearl Street
Elizabeth, N. J.
ELizabeth 4-3900

Page 8

A. Schrader's Son
Div. Scovill Mfg. Co., Inc.
470 Vanderbilt Avenue
Brooklyn, N. Y.

VALVES, AEROSOL (Sealed-Until-Time-of-Use)

Dill Manufacturing Co.
700 East 82nd Street
Cleveland, O.
UTah 1-3200

VALVES, AEROSOL (Ultrafine Particle Size)

Aeroprojects, Inc.
310 East Rosedale Avenue
West Chester, Pa.
Owen 6-4710

EDITORIALS

Aerosol Buyer's Guide

The Buyer's Guide in this issue, the first one ever published exclusively for the aerosol industry, was undertaken with some misgivings. As with every first attempt, it will undoubtedly contain errors and omissions, and for these we apologize in advance.

In compiling this information, we have attempted to use all possible primary sources — suppliers' bulletins, trade association listings, publications in related fields, and a myriad of miscellaneous sources. Wherever practical, we have directly queried a number of "possible" source listings; and in no case have we knowingly failed to list any firm we either know or were told by some authoritative source is in the aerosol business. As compilation of the list reached the final stages, we had at least one individual in every major aerosol supply category go over the names and check for possible omissions. Despite the fact that with all this preparation we have the most complete and up-to-date aerosol directory ever assembled, we still have an uneasy feeling that we may have failed to include some who should be listed.

If any who may have been omitted will, during the coming months, write us and describe exactly what services, components or raw materials they offer, we shall be happy to include them in our directory for next year.

An Important New Book

Though we like to boast that *Aerosol Age* is the most informative publication in the aerosol field, there is one publication that is probably of more concrete value to the small packager or supplier especially in the beginning stages. This publication is the *Aerosol Guide*, published early last month by the Chemical Specialties Manufacturers Association.

This valuable volume contains all of the testing methods developed by the various committees and subcommittees of the CSMA's Aerosol Division. Such important material as the premarketing check list, the filler safety manual, standard minimum fill information, mailing instructions, etc., make this particular book invaluable to the "old hand" in the aerosol business, as well as to the novice.

As was pointed out at the recent Chicago meeting of the Society of Cosmetic Chemists by Morris Root, far too many of these important test procedures aren't being followed—and the veteran aerosol companies are just as guilty as the new companies in the field. It should be pointed out that these tests are each the result of hundreds of hours of research, many conferences, and much work on the part of committee men.

In most cases they are devised to afford the packager the highest degree of safety and the most chance of product success. They are intelligently planned to meet all existing government regulations in the most painless manner. All packagers (in fact, all those in the aerosol industry) are strongly urged to reexamine the test methods and other information included in the CSMA Guide.

The Glass Controversy

The uncoated glass aerosol container controversy is far from over as yet. Jack Pickthall, who started it all with his article in *Soap, Perfumery & Cosmetics* early this year, keeps the discussion going in his aerosol column in *American Perfumer* every month; and, in a coming issue of *Aerosol Age* will have another contribution on the subject.

Maria Wiener's excellent article (in the August *Aerosol Age*) has received excellent comment throughout the industry, and she informs us that she hasn't spoken her last on the subject either.

Left: Peterson Filling's main pressure line, with the cartoning operation at right. Right: An aerosol line reserved for filling cosmetic products in both cans and bottles. To insure quality control, the filling lines are in separate rooms, and blending and refrigeration operations are also in separate areas.

a pictorial visit to . . .

PETERSON FILLING

IF A hub of activity in the aerosol industry exists today in the Midwest, certainly Danville, Illinois can lay strong claim to the title. A major contributor to the rapid growth of the pressurized packaging industry in this downstate community of 38,000 is the Peterson Filling & Packaging Company.

Founded in 1955, the firm can look back over two years of startling success. In this short time, Peterson Filling has grown to become one of the largest contract fillers of aerosol products in the country. This growth can be somewhat reconciled with the company's short history by the fact that some of the principals of the company were associated with the aerosol industry even before its commercial acceptance in 1947. When Peterson Filling produced its first run of products, the industry was enjoying a volume of 140 million units, a point from which (in the mind of company president Harry Peterson) an unlimited expansion could result; providing a participating firm were to carefully plan its progress. Mr. Peterson felt that aerosols had reached a significant point, and that annual increases in unit volume certainly indicated pressurized packaging was here to stay. However if volume were to be substantially increased within a relatively short period of time, he felt that certain phases of aerosol production would have to undergo drastic revision to bring them up to date.

In planning the physical organization of the new company, probably more consideration was given to the problem of storage and materials handling than to any other single item. The company's directors felt that, in spite of equipping their plant with the most modern filling and packaging equipment, the effort could easily be wasted if complete automation of other than actual filling operations was left to fall in place by itself.

Peterson Filling acquired a recently vacated zinc refinery, including 85 acres of plant site on which stood 57,500 square feet of building space. With this area, the Peterson Company management felt its plant could be made as flexible as their operation or industry requirements would demand, and 50,000 square feet of the major building was set aside for manufacturing and storage of finished products. Additional space was allocated for raw material storage.

Two railroad sidings with room for twelve cars were built, and at present cars of propellant or product ingredients are moved in daily and box cars loaded with finished products are dispatched to every section of the country almost as frequently.

In addition to facilities for piping propellant and ingredient materials from tank cars, one 4,000 gallon and nine 1,000 gallon tanks have been built to store complete blends of propellant and active ingredients. Raw material storage also includes ten outdoor tanks consisting of one 25,000 gallon, five 10,000 gallon and four 6,500 gallon tanks for the storage of diluents and volatile materials. Over three miles of pipe are used in various stages of feeding and trans-

ferring propellant and ingredient mixtures.

PETERSON FILLING currently utilizes two separate aerosol filling rooms, one for the cosmetic products (in both cans and bottles) and the other for general filling. In addition, filling facilities are available for non-aerosol products in units from one half pint to fifty-five gallon drums. Still another operation of the firm provides for the chemical blending of chemical specialty and agricultural chemical products which are Peterson Filling's own formulation and these are custom shipped in drum or tank truck bulk lots.

The aerosol filling lines are in themselves some of the industry's most modern, equipped with an eight nozzle pressure and vacuum can cleaner, automatic can coater, electronically-timed fill, mechanical crimper, stainless steel mesh screen protecting the entire top of the four line water bath and automatic top and bottom water blower, valve tester, capper and case sealer. Six inspection points insure

Top: Peterson Filling's main pressure line at one of six inspection points. The company also maintains filling facilities for non-aerosol liquid products.

Another view of the main pressure line.

Ten indoor tanks, ranging in capacity from 1,000 to 4,000 gallons, are used to blend the product and propellant according to the customer's requirements.

Ample warehousing facilities to provide storage for the packaged products are an important part of Peterson's plant. Fork-lift trucks and modern handling methods are used to move the merchandise.

In the company's laboratory, which includes modern testing equipment, aerosol products are given exhaustive shelf-life, drop, and other tests important to product success.

uniform quality of product along the entire line.

To insure better quality control and neatness of operation, all blending operations and all refrigeration equipment are located in a separate room.

In keeping with recent developments within the industry, the company is equipped to handle hydrocarbon (butane and propane) filling. Because of the inherent problems in handling this new type of propellant both alone and in conjunction with halocarbons, Peterson Filling's physical facilities and materials handling methods seem ideal. With ample room for expansion on their huge tract, a separate building was constructed exclusively for hydrocarbon filling. According to Mr. Peterson, all methods used in this operation meet or exceed existing standards for the handling of liquefied petroleum gases as specified by the National Fire Protective Association. He feels that since the only dangers of this new product exist during the filling operation, new aerosol markets will soon be available as a result of wider hydrocarbon use by marketers.

Peterson Filling's contribution to "the hub of the aerosol industry" is further emphasized by the fact that it is served by three major railroads and several truck lines; and, because Danville is the break point on freight rates for east-west and north-south shipments, drop shipping can be handled economically.

IN THE two years the company has been in business, plant production capacity has been increasing steadily to today's annual output of 64 million units. One of the firm's lines regularly produces 52,000 units in a single seven and one half hour shift. In spite of this volume, many regular production runs number only a few thousand units, while others involve millions — a testimonial to the flexibility of this young, but already major, contract filling firm.

Asked about future plans for his organization, Harry Peterson states that: "Since it is reasonable to believe that the annual growth of aerosol products produced and sold within

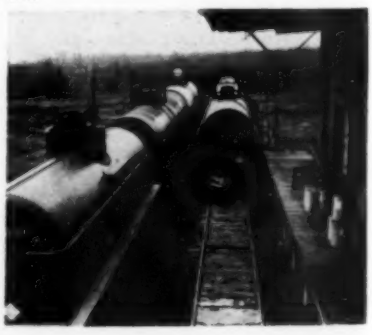
Harry Peterson

the chemical specialty field will continue, we here at Peterson Filling must continue an expansion program that, in effect, has never stopped since our founding. Then, too, there is the all important area of food aerosols that seemingly is just over the horizon, and when on the market, will dwarf today's 320 million annual units in the chemical specialty field."

As a step to insure Peterson Filling's position in the aerosol contract filling field, a full time food technician was recently added to the research staff. According to Mr. Peterson "when food aerosols do arrive, we will most likely have a separate and complete plant to handle their storage and production. Certainly we have the room somewhere on our 85 acres."

When that day arrives, Peterson Filling & Packaging Company in Danville, certainly will become a major factor in the food field, as well as in the chemical specialties field.★

A tank-car siding permits storage of various types and mixtures of propellant and product.



Research Reveals New Possibilities for . . . .

Pressure Packaging of Food Products

WITH the announcement by Continental Can Co., New York, of the perfection of pressure cans for spray dispensing catsup, mustard, salad dressing, cake frosting, syrups, and other food products, the aerosol food market may have received a substantial push even before the long-awaited FDA action on approval of fluorinated hydrocarbons as propellants.

Previous to the announcement, the range of foods which could be packed in pressurized cans was restricted almost entirely to such foam products as whipped cream and dessert toppings, mainly because the compressed gases used as propellants (nitrogen, nitrous oxide, argon, and carbon dioxide) would not produce a spray or stream pattern under previously-known pressure-dispensing techniques. Also, with these old techniques, it was found that the gases would not dispense a great enough proportion of the product, in some cases leaving as much as 20% in the can after the pressure had been dissipated.

Continental's research findings came after experimentation with a number of different gas mixtures, specially-designed actuators, and valve orifices. They would appear to make possible the pressure dispensing of both oil and water-base foods in either a spray or stream pattern with a minimum of aeration and with residual product held to an acceptable minimum.

Part of Continental's development work was in the modification of valves to produce the desired dispensing characteristics. Valve manufacturers were consulted concerning new types of valves and indicated a willingness to make any special valve for the food industry which would have a large potential use. Since the valve is so integral a part of the development, it should be considered first in a discussion of the findings.

THE basic requirement of any valve for dispensing food products is that it must not clog. The body orifice, or orifices, should be so designed that food particles will pass unrestricted into the actuator, and thence into the atmosphere.

For spray-applied food products the valve must be so arranged that there is a high velocity of product flow into the actuator. By so doing, valves with large unrestricted orifices assist in preventing clogging, and, at the same time permit a rapid flow of product and assist in the break-up of product.

Continental researchers found that one of the most important single factors in achieving the desired spray characteristics (exclusive of prevention of clogging) is the actuator button, and that by proper design of its structure and orifice, it is possible to dispense almost *any* food product in the desired form. Efforts are currently underway by several valve manufacturers to modify some existing actuators for use with heavier and more viscous products. These manufacturers are studying enlarged orifices, or the provision of a multiplicity of orifices, in the hope of achieving a wet spray with viscous products.

AS to propellants, the recent research at Continental's Metal Division Research and Development Department in Chicago has indicated that compressed propellants (such as nitrogen) can be employed in spray food products with as little as 5% (or less) product retention.

The principle of dissolved gases, employed with varying degrees of success in the packaging of food products, involves forcing the gas into the container (where it dissolves to some degree in the product); and equilibrium is eventually reached between gas pressure in the product and that in the headspace. When the valve is opened, the pressure of the gas in the headspace drives out both product and whatever propellant is dissolved in the dispensed portion of the product. As the product level subsides, the headspace is increased.

In expanding to fill this growing space, the gas pressure in the headspace is reduced. However, some of the dissolved gas then leaves the solution and passes into the headspace to re-establish a new equilibrium between the two phases — and this relationship is continued until all the propellant is discharged.

The solubility of the compressed propellants in food products is a significant consideration in the final success of the pressurized food product. Due to the fact that each of the gases approved for use in foods (carbon dioxide, nitrous oxide, nitrogen, and argon) has different solubility characteristics in different foods, the interrelated factors of product formulation, charging pressure, shaking cycles, and product retention are so complicated that much experimentation is generally required with each product to obtain required overall characteristics.

The researchers report that carbon dioxide and nitrous oxide have relatively high solubilities, while nitrogen and argon are of relatively low solubility in most food products.

However, other considerations than that of solubility determine the use of any particular propellant. For example, the use of carbon dioxide is limited to those products where acidic taste (due to the formation of carbonic acid) is no problem. Nitrous oxide is noted for the sweetish taste it imparts to most foods. By combining these two propellants in the proper ratio, a gas is achieved that has relatively little effect on product flavor. Due to low solubilities, nitrogen and argon have greatest application where a minimum of aeration is desirable.

Increased knowledge of the limitations of these propellants with food products, as well as correlation of solubility, charging, pressure, and shaking cycle data over the past several months has done much to enhance the development of pressurized foods.

THE prime requirement for any candidate food product for pressure-packaging is close control of viscosity. Many of the food products that would be logical candidates for pressure packaging are of such high viscosity that without reformulation they are immediately precluded from normal flow through a spray valve. However, when a product is reformulated to either increase or decrease product viscosity to the desired level, care must be taken to control both the physical and microbiological stability of the product.

In the early development of food aerosols, one of the most serious problems encountered was the severe aeration of the product. However, with the proper combination of valve, propellant, shaking cycle, and the valve actuator, it is possible to reduce this reaction in most products to a minimum — thus assuring a fair degree of product color and flavor stability.

ConCan has found that particle size of the pressurized food product will become increasingly important, particularly in those products to be dispensed through a spray-type valve. With products that have large particles or are pulpy in nature, a finishing operation will be required to reduce the particle size to a point where an unrestricted flow of product through the valve orifices can be achieved. For currently available valves, a particle size of .030 inch or less is required to prevent clogging.

Container requirements for the wide range of acid or low acid foods presently contemplated for pressure packaging are being studied as the products are developed. As with non-food aerosols, it has been very difficult to forecast shelf lives for products packed under pressure. It has long been known that a food product becomes more corrosive to the container components when packaged under pressure, and that this corrosiveness is accelerated by storage at elevated temperatures.

Biological preservation is a major consideration in pressure packaging of foods, since most will require some degree of biological preservation. A determining factor is the natural acidity of the product, and, on the basis of product pH and its susceptibility to spoilage, ConCan researchers have divided the treatment of pressurized foods into three basic groups:

1. *Those Requiring Heat Treatment*—In a wide range of food products that have pH values of 4.5 or below, heat treatment is required to insure adequate protection against bacterial spoilage. The chief causative

(*Continued on Page* 111)

Aerosols In Finland

AS early as ten years ago in Finland, some commercial interest was shown in the then new aerosol insecticide "bombs." However, it wasn't until 1951 that the first large lots of aerosol insecticides appeared on the Finnish market. In that year Cooper's "Fly Spray" was introduced, an imported product made by the English firm of Cooper, McDougall & Robertson Ltd. During the first year nearly 4000 packages of this product were sold. Considering the relatively small population of Finland, this marked the beginning of what was to be an energetic and fast developing domestic industry.

By the following year more than 50,000 six-ounce and more than 3000 12-ounce dispensers, all made by the same English manufacturer, had been marketed in Finland.

Thereafter the sale of these fly sprays, which contain as active ingredients pyrethrins and piperonyl butoxide, grew in great strides. This growth is best illustrated by the following sales figures, which were furnished the Plant Protection Institution by the leading manufacturers. This institution administers the laws and statutes of this field, and supervises the quality of plant protection and insecticide products. In 1953 manufacturers and importers sold 77,000 pressurized insecticides—capable of treating about 4.3 million rooms, in dwelling houses, of the 30 cubic meter size. In 1954 the figure reached 130,000, and the next year totalled 475,000 (valued at about 154 million Finnish marks). Since a current U.S. quotation of the value of the Finnish mark is $.0045, the value of the Finnish Aerosol market in 1955, at manufacturers' prices, was in the vicinity of $693,000.

by **Yrjo K. K. Talvitie**
Vice-President
Berner OY
Helsinki, Finland

Last year (1956) total sales reached about 600,000 dispensers—corresponding to approximately 180 million Finnish marks or $810,000.

As has been said previously, imported insecticides at first dominated the aerosol field, and no domestic filling at all was done. It was soon discovered, however, that foreign trade restrictions (more accurately, foreign currency exchange difficulties) were very severely restricting these imports. Due to this problem, and to the fact that these restrictions most gravely affect plant protection and insecticidal products imported as *finished goods*, we were forced to begin our own aerosol filling.

However, it should be kept in mind that the raw materials for insecticides were, and still are, imported from abroad — although the containers are being filled domestically in a number of plants.

The first companies to begin domestic manufacture of pressurized products in Finland were Berner Osakeyhtiö and Lääke Oy, both of which went into operation in the summer of 1954. The following year Transmeri Oy began its own filling of insecticides, then Kasvinsuojelu Oy and also Rikkihappo-ja superfosfaattitehtaat Oy began filling operations (the latter, so far as is known, in 1956).

As often follows in such a situation, all these companies have concentrated mainly upon the manufacture of pressurized insecticides, and most of those approved by the authorities for sale generally contain 0.4% pyrethrins and 3% piperonyl butoxide.

THE major portion of these factories employ pressure filling equipment, generally European in manufacture. One, Berner Osakeyhtiö, has purchased some cold filling machinery from J. E. Schmalback, Germany, and operates it along with some Swiss pressure filling equipment bought from Aeratom A/G.

Currently there are two companies in the metal fabricating field that manufacture suitable dispensers for the filling of aerosols. Tin-plate containers are being manufactured by G. W. Sohlberg, and aluminum containers are being made by Printal Oy. Both companies supply either lacquered or un-lacquered interiors in their containers, with blank or printed outside labels.

Owing to the ever-present currency exchange problem, manufacturers were forced, until a few years ago, to rely on valves made in Finland. However, since these valves were being made in such small quantities, the cost factor became crucial and imported valves have, at least for the time being, won the field. During 1954 and 1955 mostly Safca factory

Some typical aerosol products from Finland: "Scout Spray Silicone," a water repellent and polish; "Berner's Meteor Oil," a lubricating oil (container by G. W. Sohlberg and valve by Precision); and "Cooper's Wind Mill," an air deodorizer in an aluminum can (by Oy Printal Ab) with a Precision valve. On the preceding page are two more Cooper McDougall & Robertson Ltd. (England) products: a moth spray and "Cooper's Aerosol Fly Spray" the best selling product in the Finnish market.

"would a self-spraying package work for my product?"

Biggest packaging and merchandising news in years is the self-spraying aerosol "push-button" dispenser. Manufacturers everywhere are investigating it and turning to it for everything from medicines to lubricants, from protective coatings to window-cleaner, with new applications being discovered every day.

The aerosol dispenser is a complete disposable low-cost constant-pressure spray gun. It can be engineered to handle a great variety of products, and it can pay big dividends in improved product performance, greater ease of use and remarkable "gadget" or sales appeal. Let Sprayon's laboratories evaluate *your* product for aerosol use. Find out what a "push-button" package can do for you!

check with Sprayon's laboratories today!

One of the oldest firms in the field, Sprayon maintains extensive research laboratories that keep Sprayon "the leader in aerosol specialties." The first to put nitrocellulose lacquer into a successful aerosol dispenser, Sprayon has developed and manufactured dozens of other aerosol "firsts" for the trade. Sprayon's completely equipped modern plant has the latest facilities for foam products, water-base products, hot and cold line work . . . "everything in aerosols". Centrally-located Sprayon is set up to give you quick, dependable custom-loading service at a practical price. The complete Sprayon service—or any part of it—is at your disposal. Check with Sprayon today.

complete custom-loading service

- laboratory and development work
- containers
- label and formula counsel
- production in any quantity
- warehousing
- drop-shipping in bulk lots

by the leader in aerosol specialties

SPRAYON PRODUCTS, INC.

2075 E. 65th Street
Cleveland 3, Ohio

valves were used; but thereafter (mainly with the manufacture of insecticides in mind) fillers have begun to use mostly Precision valves. Risdon valves are also being used in quantity, especially for glass aerosols.

For its propellant requirements, the Finnish industry has been using (within the borders of the currency situation) almost all available propellant gases of the "Freon" type: "Freon" (DuPont), "Arcton" (ICI), and "Frigen" (Hoechst).

As has been mentioned previously, the dominance of aerosol insecticides has somewhat hampered expansion along other product lines. However, during 1956 and 1957 there *has* been expansion into the following fields:

1. Fire extinguishers — three different trade marks appeared in 1956 (most of which use carbon tetrachloride as the active ingredient), and last year more than 10,000 were sold.
2. Lubricating oils, containing graphite and rust-removing materials (of which there are a number of different brands on the market) last year sold 4000-5000.
3. Moth control aerosols containing DDT (three brands) had total sales of about 10,000 dispensers in 1956.
4. Air Freshener (currently being marketed by two filling companies) sold about 20,000 containers last year.
5. A Surface Protectant, containing silicone, that shields surfaces against dirt, dust, and water, appeared on the market last year and sold 3000.

Berner Oy, a pioneer in the Finnish industry, recently initiated a wide service activity with regard to other chemical plants in the country and does contract filling for a number of these. Hair lacquer aerosols have been manufactured for three different firms (Helene Curtis "Spray Net" included) and this product category totalled more than 30,000 last year.

To this date roughly 5000 eau de cologne and about 4000 spray deodorant products in aerosol form have been filled in glass bottles. A newer novelty in the Finnish market is an aerosol shaving cream, of which 3000 were filled in 1956.

In Finland, the customer, according to the usual contract for such filling jobs, delivers the active ingredient, propellant, containers, and valves. The custom filler then charges the client from 20-30 marks (about 9 to 13¢), of course depending on the characteristics of the product and the volume to be filled.

This is the sixth foreign report in a series by *Aerosol Age*. In future issues aerosol industry articles by authorities in France, Japan and Argentina will be included, as well as articles summarizing developments in a number of other foreign countries.

Since most of these products are considered luxuries and the total population is only a little over four million, the Finnish market is not large. The industry in Finland, however, believes that gradually the aerosol — with its handiness and many other advantages — will come to be known in ever widening circles.

Almost as soon as currency difficulties forced the change from import to domestic filling, with the acquisition of specialized machinery and the beginning of fly spray manufacture, many firms were forced to look to custom filling jobs and new products to occupy their machinery. This has resulted in a number of product types appearing on the market, most of them in minute quantities by U. S. standards.

IN the insecticide field, as in the agricultural product trade, importers and manufacturers usually sell their goods in Finland solely to wholesalers, who in turn sell them to retailers. A "gross quotation" is in force here. The retailer receives, when figured "downwards," a sale commission of 20%. The wholesaler receives a sale commission of 16% —which is figured "upwards" from the manufacturer's price. By totalling it in this way, the total sales commission for the trade is 31.03% on aerosol fly spray.

The retail discount on fire extinguisher aerosols is 23% and the wholesale discount, when figured against the wholesale price, is 10%. For room deodorizing aerosols it is reported that discounts of 30% are taken for the retailer and 15% for the wholesaler. These commissions, it will be noted, vary somewhat, and are given to provide an example of the merchandising picture in Finland.

As for typical prices in Finland, the price of Cooper's "Fly Spray" in a six ounce dispenser is 470 Fmk (about $2.11) and that of "Moth Air" is 390 Fmk ($1.75). Fire extinguishers in 12-ounce containers sell for 880 Fmk ($3.96) and air fresheners for 490 Fmk ($2.20).

Though these prices may seem quite high, it should be remembered that a purchase tax of 20% has been included in each price. Also the manufacturers have to grant the wholesaler 2% discount for cash and a 1 to 2% freight prepayment when sending the goods—plus a 1 to 3% yearly discount. Also, since the whole aerosol idea is quite new in Finland, and effective advertising part of merchandising costs, this has a further inflationary effect on prices. Again, it should be noted that the small-run manufacturing techniques also contribute to high prices.

The experiences of 1956 seem to indicate that, though Finland is traditionally thought of as a conservative country, aerosols have developed at as high a level as has been achieved in most other European countries. It is probable that still more aerosol products will appear on the market during the next few years. On the other hand it is quite clear that, under existing marketing practices, prices cannot be markedly reduced even with increased efficiency in the domestic manufacture. It would seem that, for the time being, aerosol products will definitely remain in the luxury category in Finland, but that their readily apparent convenience to the consumer will bring an expanding industry.★

AEROSOL

PAINTS

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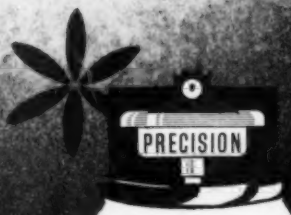

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Aerosol Valves

a discussion of the characteristics, performance, and theory of valves for a variety of common products

by Robert A. Foresman, Jr.
Aerosol Consultant
Philadelphia, Pa.

WHEN the present aerosol industry began more than ten years ago, the most obvious difference between these packages and all previous packages was the presence of a valve or push button dispenser, as compared to a cork, screw cap, or removable crown seal.

The original and still predominant type of push-button spray accomplishes the formation of fine particles by a combination of distintegrating and evaporation. The pressurizing factor in these packages consists of liquefied refrigerant gas which is combined in the container as a liquid under pressure in solution with the active material. When the button is "pushed" a stream of the liquid combination of liquefied gas and active material is started out through the valve. As the liquid expands in the valve chambers and droplets form at the valve orifice, and are propelled forward from it, the liquefied gas portion of each droplet does two things. First, it expands rapidly, thereby shattering the particle into many smaller particles. In addition, its total evaporation reduces the volume of each ultimate droplet to that taken up only by the active material. The result is the formation of a cloud of particles, each one of which may be less than 30 microns in diameter (although there is a particle size distribution *characteristic*, rather than a specific particle *size* for each combination of valve and formula).

Originally this push button dispenser had seemed to pose an insurmountable problem during World War II, due to the "obvious impossibility of production in quantity and at a low price of the precision mechanism necessary to meter the discharge of a Freon-carried material." This quote is only approximate, but the only solution during the war was to use a long capillary tube to achieve the pressure drop required, rather than to attempt to produce the equivalent tiny orifices in quantity.

This bugbear carried over into the peace time aerosol to such an extent that the Continental Can Co. had to design a satisfactory insecticide valve in order to promote the use of fabricated tinplate aerosol packages. Closely following on this development was the one inch cup mounted valve developed by The Bridgeport Brass Co. for the Crown "Spra-Tainer." Both valves appeared in 1947.

AS soon as it was demonstrated that mechanically dependable valves were a practical fact, improvements in design and reduction in cost were undertaken by independent manufacturers, with the result that by 1949 a number of valves were available to the industry at large. Despite their size and low price, aerosol valves represent involved theoretical concepts, exceptionally precise high speed manufacturing processes, and one of the relatively few fields where the general practice is to functionally test each and every production item.

Every aerosol valve must provide at least one chamber having an inlet orifice and an outlet orifice, across which there is a pressure drop, with consequent expansion of the flowing gas within the chamber. All design details must take into consideration this expansion effect and must either work toward it or allow its incorporation. Generally the cut-off of the valve is located as near the interior contents of the container as possible and one expansion chamber is incorporated into the permanent closure assembly. Secondary expansion chambers and external discharge orifices are usually located in the removable "push button."

Aerosol spray characteristics: rate particle size, and pattern, are functions of the overall formula and the valve. Obviously, if optimum proportions of a formula are finally arrived at, the only way left to improve the spray character is to alter the valve. Naturally, except for very special cases, this is not practical as experimental formulations are tested. Instead, the companies making valves have taken over the responsibility of developing valves to do the many different jobs required as formulators in the industry asked for them. Fortunately, broad general areas of valve design have emerged and although there are reportedly hundreds of special specification variations for commercial valves, the experimental formulator can take his pick from large numbers of variables of perfectly standard valves.

There are two very broad classifications of valves in present use, namely: Foam valves and spray valves. Spray valves can be further broken down, although their classification by products dispensed is probably more illustrative than classification by valve characteristics. Generally, the following products are handled by spray valves having some special variations one from the other:

Space Insecticde, or true aerosol
Surface insecticide
Christmas tree snow
Paint
Colognes
Window cleaner
Powder

Valves for these "sprays" all have a common denominator in that they produce a cloud of separate discrete particles which are intended to serve their purpose at some distance from the dispensing orifice.

FOAM valves, on the other hand, are quite different from spray valves in that they produce a large mass of homogeneous foam which is ready to serve its purpose the moment it accumulates at the nozzle and is removed by the hand of the user. These valves are essentially much simpler than spray valves, since the orifices can be much larger and the sealing mechanism may be much less precise, although none-the-less positive. Usually the single expansion chamber is quite large and certainly its volume-pressure drop characteristics are not nearly so critical as for spray valves.

In the interest of production economies, some of the larger manufacturers of valves have standardized an essentially basic unit assembled to the container closure, with which they accomplish both spray and foam dispensation by simply changing the external discharge button of the valve.

In addition to the general characteristics of valves already discussed, there are a number of special considerations in valve choice which are of increasing interest.

Since the very early work on formulations, there has been an effort to include as much active ingredient as possible into each package. As long as the atomizing effect must be accomplished by the expansion of a portion of the formula, no great increase in the quantity of active material is possible. The mechanical break-up or three-phase type spray has been one answer to this. Formula-wise, these products, as a class, consist of a large percentage of active materials partially or wholly immiscible with a small percentage of propellant (usually less than 10%), which layers out either on the bottom or the top of the active material (depending on the relative densities). The siphon tube must be cut short enough to preclude the entrance of liquid propellant into it if a bottom layer of propellant is used.

Where this three-phase formula condition exists, an ordinary aerosol valve would yield only a long unatomized stream, since the dispensed material would contain no expansion capacity. The mechanical break-up valve is a conventional aerosol valve as far as the container closure is concerned, but the button is so arranged that the flow is directed into a revolving path which spreads by centrifugal force as it leaves the central orifice (air-powered garden sprayers of the tank type use this same principle). In manufacture, the original mechanical break-up valve heads required the facing of the molded centrifugal channels by a tiny stainless steel cup with the discharge orifice perforated in its center. Recently there have appeared very ingenious designs of mechanical break-up buttons in which the entire break-up mechanism is molded into the button *without* any additional assembly.

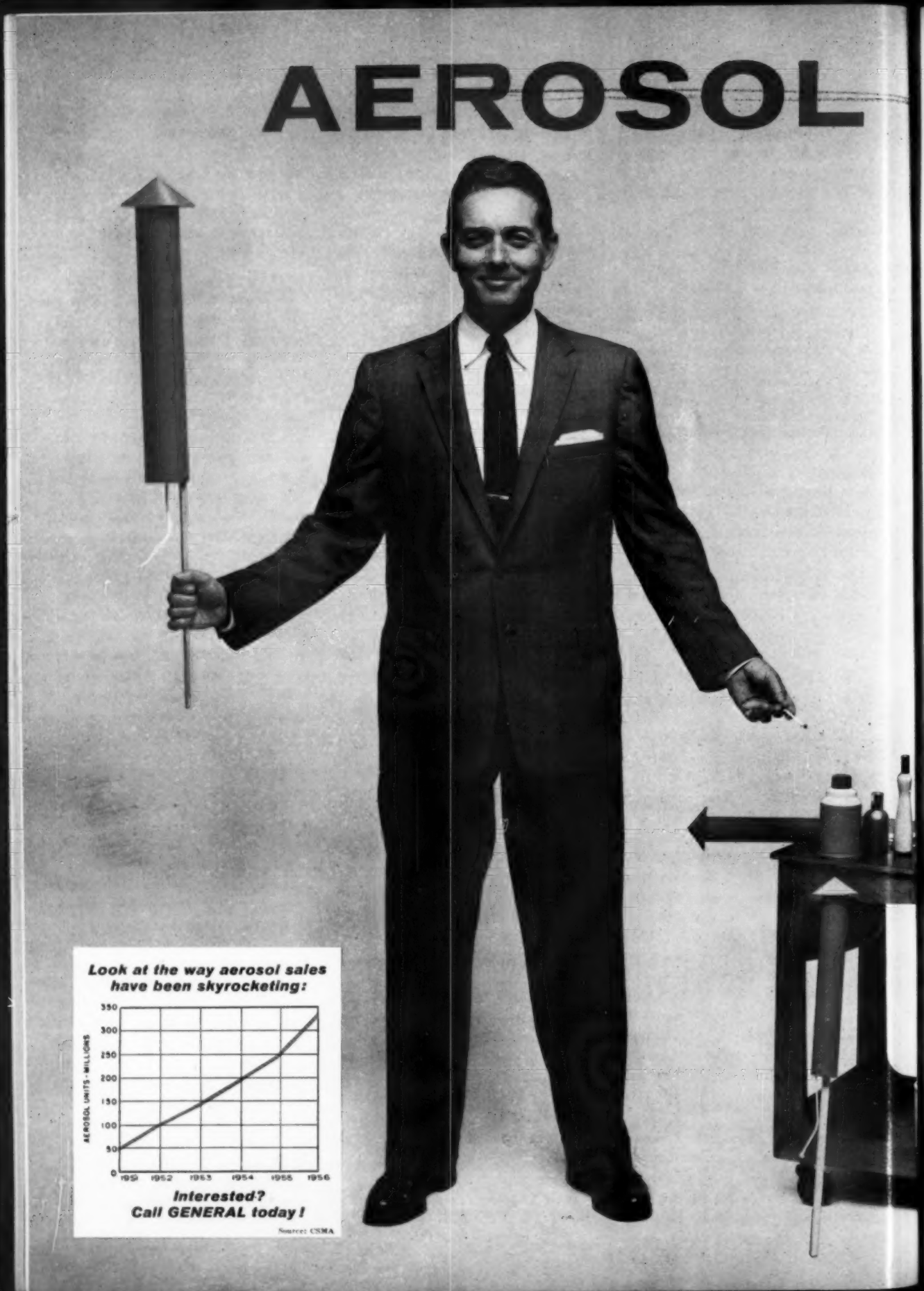
MEASURED dose or metered valves are being used in increasing numbers. There valves have all the other functions of standard aerosol valves and, in addition, deliver a measured amount of the container contents at each actuation of the button. In the pharmaceutical field, metered dosage will be an absolute prerequisite to aerosol packaging of many products. With perfumes and other cosmetics, better control with less waste and dissatisfaction is possible, as well as the not inconsiderable advantage that a specified number of applications can be guaranteed. Metered valves are available for both cold and pressure filling. Pressure-fill valves can be cold filled, but the reverse is not always true, therefore the type of filling procedure should be indicated with inquiries or orders.

Pressure filling through the valve mechanism (after the closure is in place) is being used more and more, and has brought the pressure filling characteristics of the various valves into prominence. This has caused specific design changes in a number of cases. The result has been valves which have large orifice flow from outside in, but normal spray orifice flow from inside out. In the case of pressure filling, the very great difference in propellant filling time between various valves makes valve choice a major factor in the cost of production. The attempt to increase pressure filling production rates with valves not designed for high speed pressure filling can result in serious damage to the valves. Valve manufacturers should be consulted on maximum filling pressures to be used with their valves under these conditions.

Powder aerosols will continue to increase in popularity in their proper fields and the choice of effective valves to be used with them must be considered. Proper formulation is a "must" for all powders, but even after the formula is put together the valve choice must be right. The primary consideration in powder valves is that the cut-off seat be so arranged that agglomerations of dry powder particles cannot accumulate and hold the valve open — (preferably the seat should consist of a relatively sharp edge rather than a surface). Passages through the valve should be as near "straight line" as possible so that the number of corners, in which powder can start to build up, is held to a minimum. All expansion chambers should be small, clean and simple since their effect is not particularly critical. Orifices throughout the valve should be as large as possible, consistent with the desired performance.

HIGH-SOLID paint formulations present two special valve problems. The residue left by the paint drying in the orifices and channels will completely clog the ordinary aerosol valve. And in addition, the settling of pigments in the siphon tube in the container interior forms a gummy plug, which is forced up into the valve mechanism when the button is pressed. The only design solution to these twin problems to date has been to make the closure portion of the valve assembly with wide open orifices after the cut-off; and to incorporate all the expansion chambers and their orifices into a removable actuator portion of the valve which can be cleaned by a solvent wash. Wherever paint formulations are concerned the use of these special valves can be considered, although a large number of successful paint aerosols

AEROSOL



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which are fitted with conventional valves are on the market and have been for a number of years.

Failure of aerosol valves in use can be disastrous and much effort has been expended (and will continue to be expended) in making sure that such occurrences are held to an absolute minimum. The valve manufacturers can do everything in their power to incorporate good design and proper component materials. However, no package of a new product, even a variation of some previously non-aerosol product should be undertaken commercially without a thorough test procedure covering all parts of the projected finished package, *especially* the valves. Points to be checked are: effect of contents on siphon tube if any—has it swelled or split and fallen away from the valve body? Have the contents had an effect on the elastomers or plastic components of the valve resulting in swelling, shrinking or malforming, thereby disrupting dimensional relationships which can result in the valve either being inoperable or developing a permanent leak? Have precipitates developed in the concentrate which might clog the valve? Are there large driable residues which can block the dry side channels of the valve? Are there residual materials which can built up on the sealing surfaces of the valve thereby causing permanent leakage? Are the metal parts of the valve and mounting cup unaffected?

Due to their lack of control over the end use of their products, valve manufacturers are understandably reluctant to offer any blanket performance guarantees. Occasionally, if a formulation has been thoroughly tested, a basis for guarantee can be worked out, but it will be a special case. Manufacturers, of course, will guarantee their valves for workmanship and materials to the extent of replacing individual valves found to be defective.

Prices of valves will vary from less than four cents for conventional types to more than ten cents for the very specialized types.

The growth of the aerosol industry from practically nothing to 300 plus

(*Continued on Page* 111)

SCC Meets in Chicago, Hears Root Define Aerosol Test Methods

by H. H. Slawson

THE aerosol industry's testing methods for evaluating performance of its products were outlined to the Society of Cosmetic Chemists at its fourth annual seminar, held in Chicago late last month.

Morris Root, technical director of G. Barr & Co., Chicago contract fillers, made the presentation at a session of the two-day seminar devoted to receiving progress reports by various society task committees. The seminar was commissioned a year ago to develop standardized laboratory methods for testing various cosmetic products.

Prefacing his paper, Mr. Root remarked that standard testing methods are useful, provided they *are* used. He told of a recent meeting of the CSMA at which some 20 tentative testing methods for evaluating chemical specialties were discussed. Inquiry revealed, he reported, that *not one* of these 20 methods developed by the association was being used by any of those present at the meeting. The final test of any standard testing method, he emphasized, is whether it is being used by the industry for whose benefit it was devised.

The aerosol industry, Mr. Root declared, had standard methods for analyzing aerosol sprays on the four points essential to production of an efficient aerosol. These four points he listed as pressure, spray delivery, spray pattern and spray angle.

Aerosol manufacturers are interested in the first of these, pressure, because of legal requirements and regulations within which they must operate. The force of the spray, he explained, is closely related to the pressure inside the container. This internal pressure, plus the area which the spray hits, determines that pressure. He then went into a detailed discussion of the CSMA standard method for determining this pressure factor and how the problem of establishing the true pressure within the can is resolved.

The second factor, spray delivery, is particularly important, in pharmaceuticals, where how much is delivered in a unit of time has to be determined. The CSMA, he said, has a tentative method for evaluating spray delivery which is helpful.

Regarding the third factor, the spray pattern, he noted that aerosol manufacturers are not as vitally interested in particle size as are cosmetics chemists. Aerosol manufacturers, he added, are dealing with a liquid which (due to coalescing, evaporation, etc.) does not stay constant as to particle size. He described a method devised for evaluating spray pattern by impingement of the spray on paper treated with a dye. (A discussion of this method appears in *Aerosol Age* for August).

As to the spray angle factor, he said laboratory technicians used to determine this by photography and use of a protractor. His own company decided that this method was not adequate and has developed another very simple method which he described and demonstrated.

The aerosol industry, Mr. Root told his audience of cosmetic chemists, is continuously making use of the four testing methods he had described. All the various types of instruments available for making the different tests have been tried, he said. "However," he remarked, "instruments are expensive and management is always reluctant to approve a requisition for a $15,000 instrument, if something for $1,000 will serve!"

The Chicago meeting at the Edgewater Beach Hotel was the first ever held by the Society of Cosmetic Chemists away from the East Coast. The registered attendance of over 200 indicated that the efforts of the Society's Chicago Chapter to get the meeting "Way out West" were successful, and it was anticipated that the experiment will be tried again in the future.★

Aerosol Industry Praised On its Safety Record

Dr. E. G. Young

"THE aerosol industry has shown a fine safety record over its ten years of existence," declared Dr. E. G. Young, of DuPont's "Freon Products Division, speaking before the recent annual meeting of the National Fire Protection Association in Los Angeles. Dr. Young's paper was presented by invitation from the NFPA to the CSMA, which, through its Aerosol Administration Committee, assigned Dr. Young as its spokesman to the Fire Protection group.

"When difficulties have arisen with aerosols in the hands of the consumer," Dr. Young declared, "it has happened because the labels were *not* read. The manufacturers have even tried to guard against misuse. Each and every can of aerosol is tested at 130°F. for leaks or distortion. No can with ingredients causing toxic hazard can be shipped or sold. Flammability is so controlled that, if it exists at all, it is less of a hazard than with comparable nonaerosol products and even then appropriate warning labels are applied."

"One might suspect that, with all these things which can go wrong (despite our safety consciousness) the performance record of aerosols is poor. Just the opposite is so. By reason of recognizing the chance for hazard and taking all possible safeguards, the industry, through CSMA, has turned in a truly remarkable performance for safety."

Reporting on a number of CSMA surveys to compile safety records, Dr. Young said that the 1953 results revealed the occurrence of 11 accidents from use of the 135 million aerosols that had reached the consumer market to that date. "By the end of 1953, the aerosol industry had filled 340 million units over the seven years of its existence. A cumulative total of 34 accidents had happened when consumers mishandled them. Sixteen of these cases (nearly one-half) occurred when aerosols were left on rear decks of parked and closed cars in the bright sunshine. . . . Half of the 18 accidents have happened when aerosols were left on stoves, radiators, or in display windows. Of the 34 accidents 25 were clearly caused by overheating. The few left are from a wide variety of circumstances. In no instance has fire occurred as a result of the accident. As a matter of fact, there is no known instance of any relation between fire and aerosols!

". . . CSMA statistics show that, by the end of 1955, 733 million aerosols were packed; and, it is estimated that over the ten-year period of the industry's existence, one billion aerosols have found their way into the hands of the consumer. Returns from this survey represent no less than 461 million of these units. Several manufacturers did not report their totals as an exact number, but rather as 'greater than 50 million'. A few did not report. In all, 65 accidents have accumulated over the ten years. 20 of these resulted in personal injury; the other 45 in property damage. *None* was caused by flammability of the aerosol nor did they result in fire. Comparison with other types of retail merchandise shows that this is a remarkable record.

"The 20 personal injury accidents ranged from minor frostbite to a claimed permanent facial disfigurement. The 45 property damage cases have been all the way from the ridiculous to the serious. In one case, an avid housewife (in her zeal to kill a fly) held an insecticide so close to a painted wall that the paint lifted off the wall — due to the solvent action of the aerosol's ingredients. Another time, Junior took a paint aerosol from Daddy's shelf and sprayed the grand piano a shocking pink.

"Cases of this type are usually settled for the cost of a can of paint for repairing the damage (or even less) for, after all, there was flagrant misuse of the contents of the can. Perhaps the most serious with respect to cost is the several aerosols which have burst on the rear deck of hot parked cars. With all the glass in the immediate vicinity, this raises quite a bit of havoc to the car. These claims are usually settled for minor charges because the lack of compliance with the label instructions is so obvious. Claims of this sort total to almost insignificant amounts. One manufacturer reported he had filled over 50 million aerosols and had a total claim settlement of only $200 for the entire production!

"Several more serious claims have been made against aerosols, some of which have reached the headlines. In one instance, it was even alleged that death resulted from an aerosol. In this, as well as all other such serious accusations, it was shown conclusively that aerosols either had nothing at all to do with the accident or else they were incidental to the accident and received summary conviction due to circumstantial evidence. The record has been set straight in every instance."

Dr. Young concluded his remarks

(*Continued on Page* 111)

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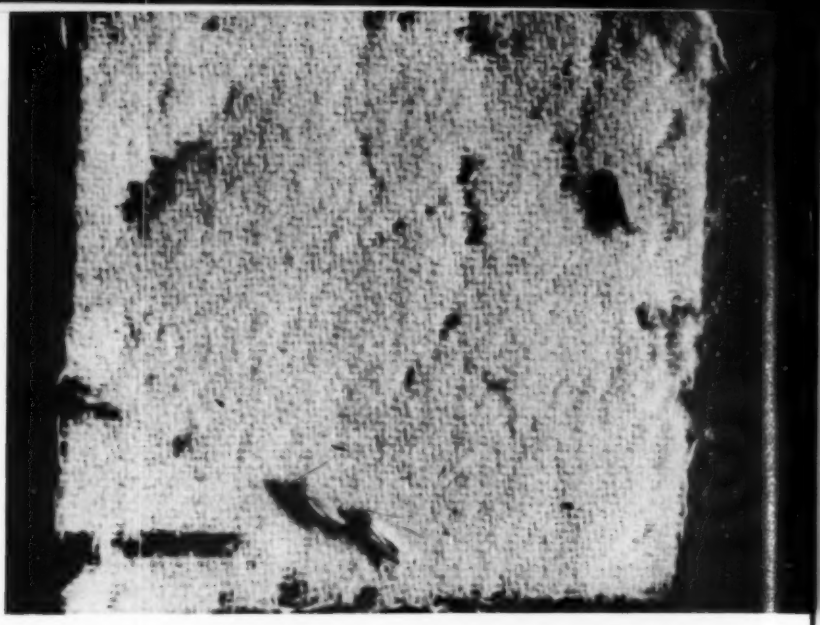
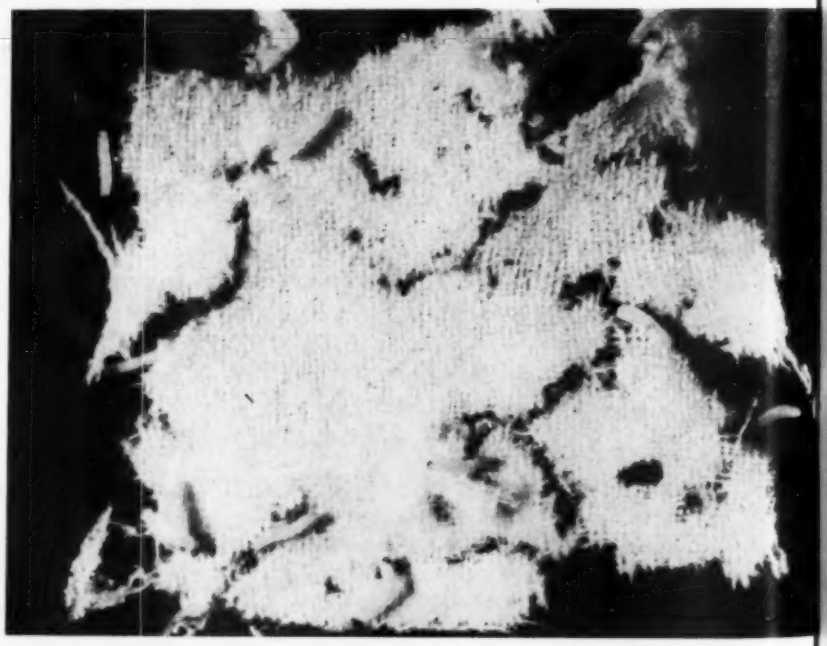


An untreated swatch of wool being visited by adult clothes moths. Note the small round eggs scattered over the background.

Pressurized

MOTHPROOFING...

a progress report



A swatch of wool being eaten by clothes moth larvae. The wool was untreated by mothproofers.

THE average cost of re-weaving a moth hole is estimated at $6.00, while the cost of protecting an entire garment by using a pressured mothproofing spray is about 35 cents.

The old methods of prevention of moth damage, such as storing in chests, and using moth balls have disadvantages: extra work, noticeable odor, short-lived protection, and the possibility of irritation to the skin unless clothes are properly aired before wearing. Late in 1954 the Rohm & Haas Company introduced a new mothproofing compound, "Perthane," which has demonstrated its effectiveness in eliminating these disadvantages. Known chemically as diethyl diphenyl dichloroethane, it previously had established an excellent record in controlling a number of destructive insects, and it was only natural for its effectiveness against clothes moths and beetles to be investigated.

Essentially, it has been determined that Perthane, when applied to fabrics is odorless, leaves no visible deposit, imparts no "tacky" hand to woolens, is among the lowest in mammalian toxicity of any of the currently employed mothproofing insecticides; and, most important, is highly efficient as a mothproofer.

The Pesticide Regulation Section of the United States Department of Agriculture requires label use directions for pressurized mothproofers to insure a deposit of insecticide equal to 0.3 per cent of the weight of the fabric. Generally speaking, this amount exceeds actual requirements for satisfactory mothproofing. The coverage is, however, desirable to provide a margin of safety to compensate for any lack of uniformity of applications by the user.

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C Standard button operation type. Selected caps in metal or plastic. All colors, styles. Over 750 sprays out of 2 oz. bottle. Economical.

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BECAUSE of Perthane's unusual solubility characteristics, odorless formulations are easily prepared. Unlike many chlorinated insecticides, this particular toxicant does not require the use of an aromatic solvent. Two typical Perthane pressurized mothproofing formulations are as follows:

Number 1

Perthane	5%
Odorless Solvent	45%
Freon, Genetron or Isotron 11	25%
Freon, Genetron or Isotron 12	25%

Number 2

Perthane	5%
Odorless Solvent	65%
Freon, Genetron or Isotron 12	30%

Pressurized mothproofing compounds provide the ultimate in ease and uniformity of application, as opposed to the use of a hand sprayer. Uniformity is gained through a single sweeping movement of one hand holding the pressurized mothproofer, while the other hand slowly turns the garment.★

TABLE 2
Employing Carpet Beetle Larvae

	TOXICANT CONCENTRATION	LOSS IN WEIGHT OF CLOTH IN mg.	FRASS WEIGHT IN mg.
Perthane	0.5%	1.0	0
	0.25%	0.9	0
	0.10%	1.0	0
methoxychlor	0.5%	0.2	0
	0.25%	1.8	0
	0.10%	5.5	3.6
DDT	0.50%	0.3	0
	0.25%	0.0	0
	0.10%	0.3	0
terpene polychlorinate	0.5%	0.4	0
	0.25%	2.8	0
	0.10%	7.0	2.3
chlordane	0.50%	1.6	0
	0.25%	5.4	5.4**
	0.10%	8.3*	6.1*
p-chloroaniline-oleate	0.50%	2.2	0
	0.25%	6.2	4.1
	0.10%	29.6%	14.0*
Check		48.2	19.4

* Fabric not considered mothproofed at these concentrations

** Probably not significant in that fabric weight loss does not exceed 8 mg. limit.

By the fabric weight loss method, the treated fabric is considered mothproofed if the weight loss does not exceed 8 mg. and the check samples experience at least 30 mg. loss in weight.

By the excrement weight method, the treated fabric is considered mothproofed if the excrement or frass does not exceed 5 mg. and the control shows at least 15 mg. of excrement.

The speakers (top row) are: Dr. Martin Barr, Dr. Ivor Griffith (president of the college), Dr. Linwood F. Tice, David S. Tillotson, W. E. Graham, T. D. Johnson, Walter E. Beard, and Robert A. Foresman. In the photograph below are J. H. Fredette (American Can), Harold Lee (Continental Filling) Z. H. Zahn (Ciba), and Richard Kraus (Stalfort)

Pharmaceutical Symposium

PROBABLY the most successful single effort of the aerosol industry to expand the use of its packaging techniques into a related field took place August 20, when the "Aerosol Symposium for the Pharmaceutical Industry" was held at the Philadelphia College of Pharmacy and Science. The one-day symposium attracted close to 150 persons, one-third of whom were representatives of pharmaceutical firms. Representatives were also present from government agencies, wholesale pharmaceutical houses, trade associations, and a large number from the aerosol industry itself.

The speakers included Walter E. Beard Jr., director of research, Risdon Manufacturing Co.; Robert A. Foresman Jr., Philadelphia aerosol consultant; W. E. Graham, division manager of research, Can Division, Crown Cork and Seal Co.; Thomas D. Johnson Jr., manager, aerosol propellant sales, Freon Products Division, E. I. du Pont de Nemours & Co.; David S. Tillotson, division manager of research "Isotron" sales service, Pennsalt Chemicals Corp.; and Dr. Martin Barr, associate professor of pharmacy at the college and organizer of the symposium. (Texts of all the papers given at the symposium were carried in the September *Aerosol Age*). Dr. Linwood F. Tice, associate dean and director of the college's department of pharmacy, served as moderator.

In addition to the regular speakers, a brief extemporaneous talk on the problems of particle size analysis was given by Dr. William Tarpley, of Aero-Projects Co., West Chester, Pa., at the beginning of the afternoon session. Dr. Tarpley reported that there are currently in existence five practical methods of measuring particle size: (1) the cascade impactor technique, (2) the pre-impinger technique, (3) freezing and collecting, (4) light-scattering techniques, and (5) measurement of the electrostatic charge of the particle. (Dr. Tarpley will have an article on the subject in the December issue of *Aerosol Age*).

Left to right are: S. J. Elmi (Powr-Pak), Henry Maso (American Cholesterol), Morris Root (G. Barr), Wiley Pickett (Pennsalt), Ray Lindquist (Revlon), Jean W. Baer (Pennsalt), George Alvan (Burroughs-Wellcome Co.), John Hart and William Brosie (Stalfort), Oscar Sumner (Pfizer) and Dr. Francis Mina (Lodes Aerosol Consultants).

At the Pharmaceutical Symposium . . .

(Top—left to right): Harvey Tull, Crown Can; D. H. Gattone, Birch & Gattone, Inc.; and T. D. Johnson, DuPont "Freon" Division. Vincent DeFeo, Dodge & Olcott; A. Wygnanski, Protection Chemical Products; Harry Isacoff, Van Ameringen-Haebler; Robert Foresman, Philadelphia aerosol consultant; and Herb Kainik, Dodge & Olcott. L. Kenner, Connecticut Chemical Research; and William Tarpley, Areo-Projects, Inc.

(Bottom—left to right): Ed Wheaton, Wheaton plastics; Walter Beard, Risdon Valve, and Larry Wheeler, Parke-Davis. Rud Saacke, G. Barr & Co.; A. LaVia, Squibb; Sig Was and Royal Ferry, VCA; and Leonard Baer, G. Barr. R. D. Cosgrove, Ohio Chemical; Al Marks, Wheaton Plastics; and J. H. Jablonski, Ohio Chemical.

TGA Announces Approval of Cosmetic Ingredient Bill

THE Toilet Goods Association recently came out in favor of H.R. 9153, a bill introduced in the House of Representatives by Rep. John Bell Williams (D., Miss.) which was drawn up in consultation with the TGA and the FDA. S. L. Mayham, TGA executive vice-president, said the association's backing of the bill stems from a conviction that some sort of law controlling cosmetic ingredients is inevitable, rather than from any conviction of the need for such a bill.

Mr. Mayham declared that "It is, and has been the contention of the TGA that no additional cosmetic legislation, with the exception of a revision of the color certification provisions, is either necessary or desirable." However, he said, the Williams bill "would seem to be helpful to the industry as a whole in improving the atmosphere of public relations surrounding it."

As the most significant features of the Williams bill, Mr. Mayham cited:

1. The bill specifically applies (and defines) "new" cosmetic ingredients. Other measures submitted for legislation include "all" cosmetic ingredients. In H.R. 9153, to eliminate the possibility that the FDA might abruptly ban a necessary ingredient without giving time for development of a substitute, no material in use between June 25, 1938 and the enactment of the bill would be affected.

2. To preserve fine research done 20 years ago, the Williams measure would exempt from the provisions "any substance which is recognized in the scientific literature or generally among experts." Mr. Mayham pointed out that this would circumvent the legal requirement that literature references be not admissible unless the author is available as a witness.

3. The bill will include a special section to change the present arrangement for the certification of colors so that the doctrine of "harmless *per se*" would be eliminated, and the Secretary of Health, Education, and Welfare would be empowered to establish tolerances and would be authorized to exempt colors from certification.

Under the provisions of the bill, any person would be able to file an application for the approval of a cosmetic ingredient. The application would have to contain reports of investigations (including references to scientific literature) designed to show whether or not the ingredient was safe, a full statement of the composition of the ingredient, a full description of the control methods used to obtain quality and uniformity, and a statement as to proposed use of the ingredient, plus such samples as may be required by the Secretary of Health, Education, and Welfare.

Within 60 days after the application is filed, the Secretary is expected to issue a regulation either exempting the ingredient or placing restrictions on it, though the Secretary may be allowed an additional 60 days if needed.

(*Continued on Page* 109)

AEROSOLS in review

Pressure Filling of Viscous Products

PROBLEMS in pressure filling of viscous products are discussed in detail in the September issue of *Package Engineering*. The authors are Robert E. Sueter, production manager, and John D. Henze, plant engineer, of The Mennen Co., Morristown, N. J., who together supervised the conversion of the plant to a closed pressure system and converted one of the company's fillers from a vacuum to gravity to solve the problem.

The essential problem at Mennen, the article points out, was the turbulence created by the vacuum filler during the fill that resulted in small air bubbles through the completely filled containers. "The particular products involved have viscosities ranging from 12,000 to 15,000 centipoises at 25°C. This bubbling action had to be eliminated and we wanted to maintain a satisfactory rate of speed in the filling operation."

After conversion of their vacuum filler to a gravity type machine, a number of other minor changes were effected. "Initial efforts included installation of a simple pressure sensitive regulator and a pump. Our basic idea was to have an air-controlled valve to regulate the material flow with the pumping action. The purpose was to provide an intermittent pumping action to move the product from its surge tank on our manufacturing floor (above the packaging floor) into the supply line leading to the filler itself, and the valve control of the total material flow rate."

"We soon found that we did not get the necessary reset action for the stopping and starting of our filler. In other words, the original regulator tried was not suited to the intermittent motion that is characteristic of a packaging line. So we installed a reset device utilizing an air (force) balance in connection with the pressure regulator. This device provided the necessary reset action and furnished the feedback to the system which caused it to provide the undamped oscillations necessary to control the valve."

The authors then go into a discussion of each of the component parts of the Mennen filling plant, and later returning to the viscosity problem, conclude: "The viscocity of the material determines the working pressure required to operate the filler satisfactorily. The reason for this is that the pressure drop across the control valve is directly proportional to both the velocity and the viscosity, and inversely proportional to the square of the opening size of the valve. By careful selection of the characteristics of the control valve, an almost linear relationship between the pressure drop and the required working pressure for a given viscosity is maintained. In other words, the fill takes place automatically, within the normal range of viscosity changes of the product and also to the demand of the filler."

See Big Aerosol Sales Gain

ONE of the most effective "consumer-type" articles on aerosols to date was an article by Ken Slocum, staff reporter, in the *Wall Street Journal* for August 29. Obviously based on extensive editorial research at the University of Michigan, CSMA, and on direct inquiries to custom fillers all over the country, the article relies strongly on authentic industry total production figures and definitive opinions by leading industry spokesmen.

To trace the spiraling sales figures for aerosol units, Mr. Slocum cites the CSMA survey figures for last year; and, in a spot check of custom fillers, comes up with the following: "Sprayon Products, Inc., of Cleveland, which loads more than 4,000 different aerosol paints for some 500 firms, says its production is running 50% ahead of last year. Big George Barr & Co., with loading plants in Chicago, Los Angeles, and New York, plans to load 50 million cans this year, also up 50% from 1956."

. . . "Consumers' acceptance of spray products keeps growing despite the fact that, with few exceptions, an aerosol product costs considerably more than the same stuff bought in conventional containers.

"One contract aerosol can loader, the Airosol Co. of Neodesha, Kan., figures an ordinary 69-cent can of hand-applied auto wax will cover the same area as a $1.59 aerosol container of wax.

"In some cases, the can costs more than the product. Michigan State University researchers note that in a 79-cent aerosol can of shaving cream, 35 to 45 cents is spent for the container alone. The remainder must cover propellant, marketing, overhead, profit, and the soap."

Much of the article is devoted to a summation of the increased popularity of aerosols in the pharmaceutical and perfume industries. "When the University of Michigan calls timeout Sept. 28 in its gridiron clash with the University of Southern California, trainer Jim Hunt will sprint out to the Wolverines with a small can

Pressing the button on the can, he will spray head-clearing ammonia at his charges to revive any groggy footballers. Back at the bench, he will have on hand another push-button spray to toughen players' feet against blisters, one to relieve pain of cuts and bruises, and one to coat the butterfingers of any fumble-prone athlete."

In a survey of perfume producers, Mr. Slocum came up with the following:

"Pressurized scents now available include 'Tabu', 'Voodoo', and 'Ambush' from Chicago's Dana Perfume Corp. Dana, which introduced its aerosol perfumes in early 1955, reports a 300% sales increase in 1956.

"Parfums Charbert, Inc., of New York, soon will add 'Breathless' aerosol perfume to its pressurized toilet water introduced in 1955. Its Jacqueline Cochran line also will take to aerosol containers later this year.

"Parfums Corday, Inc., U.S. distributor for Parfumerie Internationale Corday of Paris, ballyhoos its aerosol containers of 'Toujours Moi', 'Possession', and 'Jet' as just the things 'for the woman who likes her fragrance with her . . . no leaking, even on airplanes.' Corday also promises its aerosols will 'go further, too, because there is an automatic stop in the spray apparatus which permits only the right amount to be used with each application.'

"Aerosols, of course have their limitations. Coty, Inc., a major perfumer, notes that 'high standard essences, containing large percentages of natural, floral products, rarely are compatible with the propellants available now.'"

The *Wall Street Journal* article goes further into the question of propellants, which it says are holding up expansion of aerosol food products. One new propellant development reported is that of Modern-Lab, Inc., Baltimore research firm, which involves a "regenerating propellant which will undoubtedly be acceptable to the Food and Drug people." The quotation is from J. P. Modderno, president of the firm, who admits that the product needs further testing.

"Western Filling Corp., Los Angeles, an aerosol loading firm, reports that in a few weeks one of its clients will market a pressurized barbecue sauce, to be dispensed as a wet spray. The company also sees a bright future for pressurized meat tenderizers, syrups, frostings, and salad oils."

•

Market Research for "Glade"

S. C. JOHNSON's concept of product development is the subject of an article (in the August *Soap and Chemical Specialties*) reporting a talk before the American Management Association meeting in New York by Samuel C. Johnson, the company's director of the new products division, who piloted much of the company's aerosol activities in recent years.

The article describes how the company researched the air freshener business, preparatory to launching "Glade," its household deodorant. The total market for this type product, Mr. Johnson estimates, "appears to be $20 million, with prospects for a growth to $30 million in five years."

According to Mr. Johnson, son of the president of the company and a great-grandson of the founder, "S. C. Johnson could expect 20% as its share of the market, with an anticipated gross profit of 60%. Numerically combining these figures indicated a gross profit estimate of $3.1 million in three years."

"'In the case of air fresheners,'" Mr. Johnson explained, "'we estimated $33,000 for development, $1.1 million for test marketing and introduction, and $22,000 in capital expenditures, or a total of $1,155,000 in new product investment. This gave us an investment-to-profit ratio of about one to three'."

"'With 'Glade' we estimated we could cover 80% of the outlets handling this type of product, that we could get the product filled economically by outside contractors, that our product would perform demonstrably better than anything on the market, and that we had a lead time over competition of six months. We found that the product technically was about average in difficulty to formulate in the laboratory.'"

Clogged Aerosol Paint Valves

THE chief offender for failure of aerosol paints to perform properly is clogged valves, reports *Paint, Oil & Chemical Review* in an "Aerosol Valve Roundup" in its August 8th issue. The periodical reports that faulty formulation is gradually being eliminated, and that the valve has become "the prime reason for failure because it is a critical mechanism, the only moving part of the aerosol package, and has some pretty small dimensions."

In praise of the valve, the article declares: "Material changes have been made to handle more potent solvents; spouts have been redesigned for function and appearance; spray patterns and particle size requirements have meant changes in orifice shape. Rate of delivery has become such an important factor that rival companies marketing identical products often request different rates, depending on what their research departments feel is the most satisfactory."

. . ."The three controlling orifices in the construction of most aerosol valves are the body orifice, the stem orifice, and the button orifice. By combining different sizes for these three orifices, valve manufacturers have learned how to obtain a broad range of deliveries. Improved manufacturing and testing techniques now let the valve maker assure constant and uniform performance.

"The valve has also been given more work to do. Where once the breakup of product into fine particles was achieved mainly by the propellant, now the valve is called upon to help."

Paint Oil & Chemical Review lists three of the leading paint valves and then proceeds to analyze each.

Of the "Danvern" valve, made by Sprayon Products, Inc., Cleveland, the article has this to say: "The valve features the smallest practical expansion chamber to insure instantaneous shutoff with a minimum of residue—an important factor in clogging. The interior metering orifice controls the flow and provides optimum atomiza-

(*Turn to Page* 108)

THERE'S NO SUBSTITUTE FOR

Aerosol

There are a few technical rough spots in adopting the new pressurized package. Here the technical know-how and experience of the aerosol research laboratory of van Ameringen-Haebler can guide you safely.

Customers of VAH enjoy the following advisory services:

- **FORMULATION TO ACHIEVE COMPATIBILITY**
- **EVALUATION OF NEW PRODUCTS**
- **TEST PACKAGING**
- **VALVE RECOMMENDATIONS**
- **FILLING PROCEDURES**
- **PRODUCTION TROUBLE SHOOTING**

Although primarily concerned with matters of fragrance, VAH established this complete aerosol research laboratory to assist its customers in every phase of this new field of packaging from product formulation to pilot runs for market testing.

van Ameringen-Haebler, Inc. 521 WEST 57

Harry Peterson (Peterson Filling) CSMA president, and John Welsh (G. M. Basford & Co.) an administrator of the aerosol publicity program.

R. A. Fulton (USDA), F. C. Nelson (Standard Oil of N. J.), and H. W. "Doc" Hamilton, secretary of the CSMA.

CSMA MEETS IN NEW YORK

The special fall luncheon of the Chemical Specialties Manufacturers Association, held at New York's Hotel Commodore on Sept. 16, attracted more than 200 association members from the East and Midwest. The general meeting and luncheon, held in conjunction with a board of governors meeting and with meetings of the various Aerosol Division committees and subcommittees, heard Dr. George W. Fiero, of the Esso Standard Oil Co., and A. Wiener, Standard Napthalene Products Co., briefly discuss the economic and chemical situation in Europe. T. E. Beplat, of the Manufacturers Trust Co., reported on economic conditions in the Far East.

Additiona' photographs appear on page 105.

Below: W. E. Graham (Crown Can), M. J. Coppola (DuPont "Freon" Division), and R. E. Horsey (Givaudan-Delawanna).

Left: Vincent DeFeo, Ruth Kitchen, and J. Aubert (Dodge & Olcott).
Below: Winston Reed (Reed Research), and Al Marks (Wheaton Plastics).

Package for profit in '57 with Du Pont "Freon" propellents

Space spray, residual spray, foam or powder—Du Pont can furnish a carefully formulated "Freon" propellent best for your aerosol product. Requirements of pressure, solubility, stability, particle size and safety are sure to be met by one of the over 25 "Freon" propellent solutions available from Du Pont.

One of these Freon* propellent solutions is exactly right for your aerosol product

"FREON" PROPELLENT	PRODUCT TYPE			
	SPACE SPRAY	SURFACE SPRAY	POWDER SPRAY	WATER-BASED FORMULAE
"FREON-12" dichlorodifluoromethane	(high-pressure, √ 70 psig)	√		
"FREON-12"-"FREON-11" solutions dichlorodifluoromethane trichloromonofluoromethane	(pressure range √ 30-40 psig)	(pressure range √ 12-40 psig)	(pressure range √ 10-70 psig)	
"FREON-114" dichlorotetrafluoroethane		(12 psig) √		
"FREON-12"-"FREON-114" solutions dichlorodifluoromethane dichlorotetrafluoroethane			(pressure range √ 12-70 psig)	√ (12-60 psig, also for glass-bottled aerosols)
"FREON-12"-"FREON-113" solutions dichlorodifluoromethane trichlorotrifluoroethane			(pressure range √ 10-70 psig)	√

NOTE: This chart indicates types of "Freon" propellents available. The exact one chosen will depend on the product dispensed and the spray pattern desired. "Freon-12"—"Freon-114" solutions are recommended for water-base products because of their solubility in presence of water.

These outstanding qualities make Du Pont "Freon" your best propellent buy

- **Safe—nonflammable, nonexplosive, virtually nontoxic.**
- **Noncorrosive.**
- **Stable and uniform in quality.**
- **Available in wide range of pressures.**
- **Good solvency properties.**
- **Applicable to all types of aerosols—sprays, foams, powders.**
- **Backed up with complete marketing and laboratory service.**

You can call on Du Pont's experienced chemists and marketing experts if you need help with your aerosol manufacturing or sales problems. Be sure to call on Du Pont, also, to supply just the right aerosol propellent for your product. For more information or assistance, write to E. I. du Pont de Nemours & Co. (Inc.), "Freon" Products Division, Wilmington 98, Delaware.

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Safe Propellents

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BETTER THINGS FOR BETTER LIVING ... THROUGH CHEMISTRY

Pressure Packaging Overseas

Some Predictions on the Future Course of the Market for Pharmaceutical Aerosols, in the U. S., the U. K. and Europe Are Offered by Dr. Tom C. Clark, Druk-Pak, Ltd., our overseas correspondent

"BUT *surely* you know the difference between a chemical engineer and a chemist, or between a pharmacist and a pharmaceutical engineer. Those are American terms and standards. The people in your country want us to adopt them in our universities and practice them in our industries. Certainly you must know about them!"

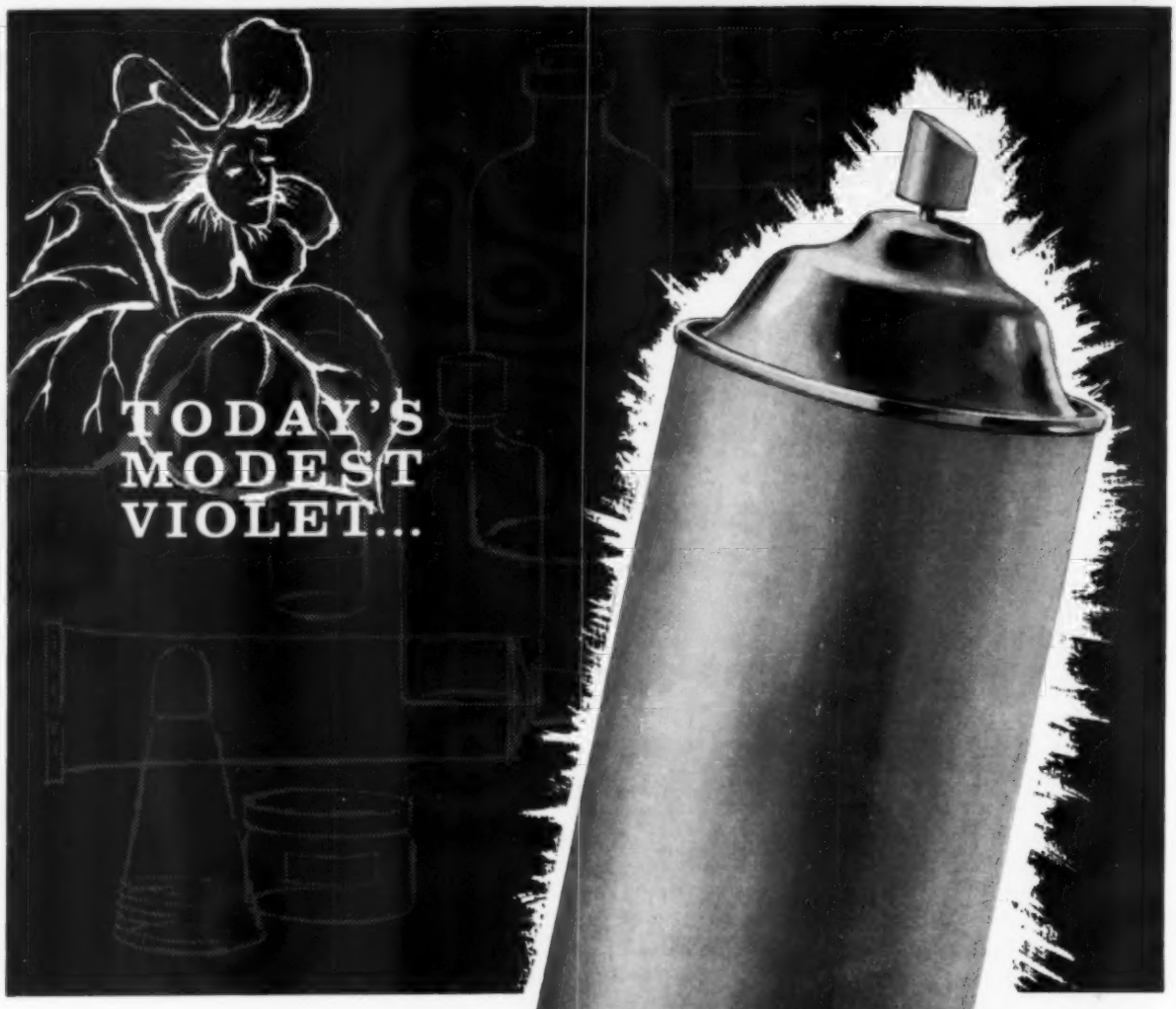
We were seated in a Swiss diner travelling from Zurich to Basel and my table companions, two scientific men whom I took to be professors, were on their way to Paris for an international chemists' meeting. It was a chance encounter, but ended with an interesting discussion of the pharmaceutical aerosol development and its potential. As it turned out later both my traveling companions were professors and both eminent in their respective fields.

As they patiently explained it to me, the essential difference between a chemical engineer and a chemist lies (according to their standards) in the kind of scholastic training the man receives, which in turn determines what kind of a "specialist" he is. Foregone in the U. S. is the conclusion that one must be a "specialist", whether in rubber, esters, fertilizers, dye-stuffs, pharmaceuticals, cosmetics, etc. But they informed me the U. S. requires even more. For example, in rubber, there are the different kinds of the synthetic stuff, mixtures and compounds of which the old alchemists never dreamed. Some of these will swell in methylene chloride and some will not; but those that will not, generally smell badly. What does one do in this situation — call in a "perfume specialist" to mask the sulfur odor, or change the formula so that it comes out white instead of black like rubber ordinarily should? But white side wall rubber tires are attractive for automobiles and who cares about the color of elastomers in the inside of an aerosol valve so long as they work with all kinds of propellant mixtures? But who does the mixing? Does one call in a perfume specialist or should the rubber man know enough about perfumes to camouflage the odor? This was the question my companions wanted settled.

Both these gentlemen (and they came from different universities in different countries) were under pressure from their faculties to change their teaching techniques to conform with American practice. One was violent and explosive, the other quiet and reflective. "What do your people expect from us, monsters?" asked the one. "Already we are losing 50% of our graduate Ph.D.'s to the United States and the local chemical industries are on my head. We must depend upon them for support, stipends, small jobs, etc. If they do not get our men, they do not give their support. But worst of all, they blame me!"

The other professor came from a smaller country, but even there he said that 25% of his Ph.D. graduates were lost to American industries. The drain leaves local industries stagnant. "What causes the movement?" I asked. "Dollars", they both replied with one voice, "too many dollars!"

IT SEEMS the European Ph.D. chemical graduate can, at the very best, expect something between the equivalent of $250 and $300 per month. That would be tops. These professors had been in the U. S. frequently to give term lectures at various universities and, being well known to their U. S. colleagues, had been asked to send over some of their more promising graduates. The one who complied promptly lost five more of his men the next year. "They like the starting $7,500 per year," he said, "and what can I do about it?" Following his suggestion, at least two large U. S. chemical companies have now set up starting research laboratories in his country, where they pay the local scale and get the pick of the crop. We were interested to learn the details of this since we have been urging it for some time. Why U. S. companies continue to put their pure

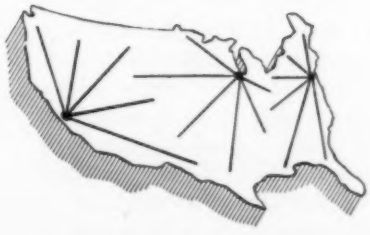


may be tomorrow's AEROSOL STAR!

It may be a cosmetic, pharmaceutical, chemical, food or specialty product. It may be a powder, liquid, or cream. It may be one of the regular products in your line. Perhaps it is an undeveloped formula or the mere "germ of an idea" in some person's mind. But the odds are that some product that is today unspectacular in its present package, may become one of tomorrow's fastest selling items when packaged as an *aerosol*.

Today in G. Barr & Company's laboratories, a continuing program of imaginative and persistent research is being carried on. All focused upon the development of new and better aerosol products and in further perfecting the Private Label aerosols we now manufacture.

We will be pleased to make available to you, the facilities and experience we have gained as America's leading Private Label Aerosol producers, to help you ascertain whether your idea, undeveloped formula or present product has an aerosol potential.



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research laboratories in the U. S. at about five times the initial costs and at least three times going costs, has always been a mystery. Pure research knows no political or geographical boundaries. It is simply a question of cost and brains. If you get lower costs and better brains in Europe, why not set up in Europe?

Eventually, it came out in the conversation that it was not the loss of their trained men which really disturbed them, but the fact that they lost them to a system of teaching to which they were opposed, and which (at the same time) was being held up to them as the modern and best system which they should adopt. "Team-work", they said scornfully, "who wants team work? Your people are so busy trying to build a team they do not have time to build a man. And if you build a man based on his team-spirit, what kind of man do you have? Mostly you have mice. Did not one of your clever newspaper people observe not long ago that it was no longer a question of whether some of your team people in Washington were mice or men, but whether they were, indeed, mice. When we develop chemists we want the man himself, in himself, to be his own team. We do not want mice."

The other companion was so equally violent about American demands ruining their university standards and so equally opposed to the "team" idea that we suggested that, if they were in such perfect agreement, they should "team up" on their opposition. Two voices "crying in the wilderness" could certainly make more noise than one, even though the people to hear might be slightly deaf. But there is one thing you can bet on: they will fight their battles alone.

TOO QUIET the atmosphere we got off on the subject of push-button-aerosols, and in due time this brought us into another loud discussion. One of my professors had received (as a travelling present from his wife) an American aerosol shaving lather to simplify his morning toilet without brush or tube. He was offended about the "gadget", which he claimed robbed him of his most preciously "inspiring" morning moments. He was under the impression his best ideas came to him while he lathered his face with a big brush, and went into many details about the performance, type, size, diameter of brush, as well as the nature and quality of the bristles. We could see it had indeed become a ritual now ruined — by a ready lather from a tin can, and, worse yet American. Our statistics on U. S. annual consumption served only to raise their voices, not their eyebrows. Since we were certain they would somehow eventually link the matter with a "team" idea, we switched to *pharmaceutical* aerosols. It hit the target.

The resourcefulness with which intelligent Europeans can find negative opposition to American ideas, products, plans, etc., is a never-ending source of wonderment. The subject at hand makes no difference: politics, industry, science, labor, machines, automobiles, textiles, refrigerators, music, etc., all have a common denominator and the basic objection is: "It will not work in Europe" or "It costs too much," or "Why, it is against human nature." The shaving lather in a pressure package is a good case in point. *Who* would pay so much to lose the idle morning pleasure of massaging his own face behind a mountain of foam in the mirror? Statistics on production and sales reveal only the enormity of mass stupidity, a conclusion one begins with and doesn't even have to prove. So runs their argument, but it has its limits and its obvious weakness.

As the entire approach of my companions is personal and subjective, one must meet them on the same plane.

IF you tell a European your purpose is to make money, increase production, stimulate sales, raise a living standard, etc., he laughs at you. He says: "So, you want a material paradise on earth without ever having proved even a spiritual peace in heaven, and you want it all materially, too."

"No", we reply, "we want it in spirit and health and ideals. We want it in the well being of mankind and you misinterpret our objectives because you have so many times failed in them yourselves. Possibly,

(*Continued on Page* 108)

—Convention Calendar—

American Drug Manufacturers Assn., Research & Development Section,
Westchester Country Club, Rye, N. Y. ..... Oct. 9-11

American Drug Manufacturers Assn., Production & Engineering Section,
Whittier Hotel, Detroit, Mich. ..... Oct. 24-25

National Paint, Varnish & Lacquer Assn., annual convention,
Sheraton Park and Shoreham Hotels, Washington, D. C. ..... Nov. 4-6

Manufacturing Chemists' Assn., 7th Semi-annual meeting and Winter Conference,
Statler Hotel, N. Y. ..... Nov. 26

Toilet Goods Assn., Scientific Meeting,
New York, N. Y. ..... Dec. 9

American Pharmaceutical Mfgrs. Assn., Mid-year and Eastern Section Meeting,
Waldorf-Astoria Hotel, New York, N. Y. ..... Dec. 9-11

26th Exposition of Chemical Industries,
Coliseum, New York ..... Dec. 16

Chemical Specialties Manufacturers Association, *Hollywood Beach Hotel,*
Hollywood, Fla. ..... Dec. 9-12, 1957

Packaging Machinery and Materials Exposition, *Atlantic City, N. J.* ... March 25-28, 1958

Toilet Goods Association, *Poland Spring House, Poland, Me.* ..... June 25-29, 1958

NEWS of Pressure Packaging

Mojonnier Names 2 in Sales

Mojonnier Associates, Inc., Franklin Park, Ill., manufacturers of filling equipment, have announced the appointment of David Maurer and Thomas J. Rink to the Mojonnier sales force.

Mr. Maurer, who is well known in the packaging field, will make his headquarters in the company's new office at 475 Fifth Avenue, Manhattan. He replaces Edward Zellar, who left Mojonnier to join E. I. du Pont de Nemours & Co.

Maurer

Rink

Mr. Rink, a packaging engineer, will operate from the company's home office in Franklin Park, calling on customers in the Midwest.

•

Seckel in New Plastics Post

Colorite Plastics of New Jersey, Inc., Paterson, N.J., manufacturers of custom extrusions and plastic garden hose, has announced the appointment of Peter H. Seckel to the post of general manager of its custom extrusion division. The division is presently being expanded, with additional modern facilities, and will begin production of plastic dip tubing for aerosols in the future.

For the past nine years Mr. Seckel was associated with Anchor Plastics, Long Island City, N.Y. He is well known throughout the extrusion industry for his contribution of new processes and technical articles.

•

Allen Joins Wheaton Co.

Robert N. Allen has joined the Wheaton Plastics Co., Mays Landing N. J., in an administrative capacity. A veteran of 12 years with the Bridgeport Brass Co., during which he rose to the position of vice-president of the Indiapolis operations (Mill Products Division), Mr. Allen left Bridgeport Brass in 1949 to assume the position of general manager of the Standard-Knapp Corp. He left Standard-Knapp in 1954 to set up an industrial consulting firm, Ace-O-Matic Engineering Co., in Middletown, Conn., and last month joined Wheaton Plastics Aerosol Division.

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First Nylon Aerosol On Market

"Stay Put" hair spray, the first major product in a nylon aerosol container, was introduced early last month by Park & Tilford, Inc., New York. The package which will retail for $1.50 for the 4½-ounce size, is being filled by the Connecticut Chemical Research Corp., Bridgeport, and utilizes a standard Precision valve crimped on to the bottle by means of a metal ferrule.

The blow-molded containers are being manufactured by Imco Container Corp., Kansas City, Mo., with the product identification being applied to the bottle by a silk-screen process. There is also a paper label on the bottom of the container which gives directions for use.

CSMA Display in Washington

The Chemical Specialties Manufacturers Association, by invitation from the U.S. Dept. of Commerce, will have a display booth in the main lobby of the Dept. of Commerce Building in Washington from Sept. 17 to Oct. 17, the association announced in a special bulletin last month. The CSMA's booth will be one of 18 other booths set up by national trade associations to illustrate their accomplishments in the adoption of Commercial Standards.

The exhibit will be open to the public from 8 a.m. to 10 p.m. daily, and from 10 a.m. to 6 p.m. on Saturdays and Sundays. The Dept. of Commerce building is on 14th Street N.W., between E. Street and Constitution Avenue.

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Chemway Elects Brunelli

Chemway Corp., New York, last month elected Vincent P. Brunelli a vice president and president of the new household products division.

Fire Burns Down Thomasson Plant, New One Planned

The production lines and warehouse of Thomasson of Pa., Inc., Norristown, Pa., one of the largest fillers in the East, were destroyed by a fire of undetermined origin on the night of Aug. 8. This was the second major fire involving a major custom filler within four months, the previous one occurring in May when the plant of DeMert & Dougherty, Inc., a Chicago custom filler, was destroyed by a spectacular fire on May 24.

Thomasson's recovery from the fire was quick, for within a week the company's aerosol filling was being done by other leading contract aerosol loaders. James W. Bampton, president of Thomasson paid tribute to "The outstanding cooperation of suppliers and competitors which made possible this transition with very little delay or inconvenience to Thomasson customers." He reported that all of the company's deliveries to customers are back on schedule.

Construction of a new plant at the same location is scheduled to begin Oct. 1. It will consist of a separate aerosol loading plant of 10,800 square feet, including 1200 square feet of laboratory. A warehouse of 43,900 square feet, an office building of 4800 square feet, and a separate mixing plant of 3750 feet, will complete Thomasson's new quarters.

The structures will be of fire-proof construction, and aerosol loading equipment has already been received in Norristown. Some production has been resumed in temporary quarters. Four high speed pressure packaging lines and one cold fill line have been ordered for October delivery.

Mr. Bampton estimated the total fire loss at $350,000, all of which he said was covered by insurance.

It's slim . . . feminine . . . ideal for cosmetics!

It's Canco's 8-oz. "Queen Size" pressure container!

Any woman will appreciate this slim, graceful, easy-to-hold container. That's why it's perfect for cosmetics—hair sprays, lotions, creams and many others.

The "Queen Size" container is available with Canco's one-inch cup opening top, or an individually styled one-piece top. Either will accommodate a variety of valves and both are adaptable to all filling and closing equipment.

The Canco representative will gladly tell you more about this well-designed pressure container and others in Canco's line—the most complete line in the industry. Give him a call!

How Canco saves you up to 35% on your packaging costs

- Canco containers cost less initially, because they're mass-produced on standard can-making equipment.
- Canco offers all popular sizes: 3-oz., 4-oz., 6-oz., 8-oz., 12-oz., and 16-oz. Available with cup tops, *or with one-piece tops which simplify packing, cut costs.*
- Canco works directly with valve makers and contract loaders to give you the most efficient package at lowest cost.
- Canco's many plants assure you prompt service, uninterrupted production schedules.

COME TO CANCO FIRST! *American Can Company* *New York · Chicago · San Francisco*

Powr-Pak Names Zamata

Powr-Pak, Inc., Bridgeport custom filler, has announced the promotion of Joseph P. Zamata to the new post of plant coordinator. His new duties will include coordination of sales, product development, and plant activities of the expanded line of aerosol products filled at Powr-Pak.

During the past four years, Mr. Zamata is credited with being instrumental in instituting new procedures for the company's entire aerosol manufacturing operations, purchasing, inventory control, and handling.

Previous to his association with Powr-Pak, Mr. Zamata served two years as purchasing agent for the Connecticut Chemical Research Corp. in Bridgeport. A graduate of the University of Oklahoma, he is a captain in the U. S. Army Reserve.

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Seek License Arrangement

Haiek Quimica, S.A., Calle Los Perez, Quinta Crespo, Caracas, Venezuela, has announced that it is seeking patents, processes, and technical know-how under a licensing arrangement with a U.S. manufacturer. The firm specializes in the manufacture of pharmaceuticals and aerosols, which are marketed throughout Venezuela by an affiliate, A. J. Haiek & Hermanos.

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Bon Ami Ad Campaign

Marking the first anniversary of "Jet-Spray Bon Ami," the Bon Ami Co., New York, last month launched an extensive advertising campaign that included national magazines, daily newspapers, Sunday magazine supplements, and spot television advertisements. About this time last year the company completed national distribution of its aerosol cleaner.

Theme of the new campaign is that the housewife will "fly through housework" by using this "new way to clean house — without water." Cartoons depict a housewife, a can of "Jet-Spray Bon Ami" in her hand, literally flying through her home. There will be a copy tie-in with Scot-Towels, and a similar campaign by Scott Towel Co. in its own advertising.

FTC Cites Oven Cleaner

The Federal Trade Commission recently charged Bostwick Laboratories, Inc., Bridgeport with making false advertising claims for its "Hep Safe-T-Spray Oven Cleaner." The Commission complaint, issued Aug. 15, charged that the oven cleaner, advertised to do away with hard scrubbing, "will *not* enable a housewife to clean her oven with just a wipe of a damp cloth," as advertised.

The complaint cited, as a typical advertising statement:

> ". . . just spray it on, wipe clean . . . removes burnt-on food and grease in minutes. It's the revolutionary new way to clean ovens that does away with caustic chemicals and hard scrubbing . . . all you do is spray on a snowy film of Hep Oven Cleaner, wait only 10 minutes, and wipe away cooked-on foods, grease, drippings, with a damp cloth or sponge."

The truth is, the complaint alleges, "ovens will *not* be ordinarily cleaned by applying the spray and then wiping off the surface with a damp cloth or sponge." Hard scrubbing with steel wool or some other abrasive will frequently be required to clean an oven when using this product, the complaint continues. The FTC concludes that these "deceptive claims deceive the public and violate the FTC Act."

Individuals named in the complaint are A. O. Samuels and Jack Schenberg, Bostwick officers, who were granted 30 days to file an answer to the complaint. A hearing is scheduled Oct. 8 in Bridgeport before an FTC hearing examiner.

•

Cyanamid Lists Staff Changes

American Cyanamid Co., New York, last month announced a number of staff changes, including the promotion of Clifford D. Siverd from assistant general manager to general manager of the Farm and Home Division. Raymond M. Nee, formerly chief engineer at Cyanmid's Lederle Laboratories, Pearl River, N. Y. plant, was appointed assistant general manager of the Engineering and Construction Division.

A READY SUPPLY OF

Rotenone Resins

IS AS NEAR AS YOUR TELEPHONE

Need quality rotenone resins for garden sprays and aerosols, pet shampoos, household and plant aerosols, cattle sprays and washes? Call C. I. C. for a **dependable** source. You'll get rotenone resins that are brittle, crystal-clear, free from impurities . . . that readily dissolve in suitable solvents. Available also in oil soluble and emulsifiable concentrates.

CIC

CHEMICAL INSECTICIDE CORPORATION

30 Whitman Ave. • Metuchen, N.J.
Phone: Liberty 9-2300
Plant - Metuchen, New Jersey

TESTED FRAGRANCES
for AEROSOLS
by PFW
PFW
for odor and taste
POLAK'S FRUTAL WORKS INC
MIDDLETOWN, N. Y.
AMERSFOORT, HOLLAND • PARIS, FRANCE • BREMEN, GERMANY • BRUSSELS, BELGIUM • SOFLOR LTD PERIVALE, ENGLAN

New Aerosol Pet Line

Dr. LeGear Medicine Co., St. Louis, recently announced a new line of pet products, including aerosol dry shampoo and tick spray products. The line will be marketed nationally, mainly through drug stores.

•

Bayer Nasal Spray Out

Sterling Drug Co., manufacturers of "Bayer Aspirin," announced last month that it will bring out a nasal spray product under the "Bayer" trademark sometime in September. The first product since aspirin to be marketed under the Bayer name, it will be packaged in a pocket-size plastic squeeze bottle.

•

New Aerosol Co. Organized

The United States Aerosol Specialties Corp., listing authorized capital stock of 10,000 shares, no par value, has filed a charter of incorporation in Delaware. Clair J. Killoran, North American Building, Wilmington, is serving as resident agent.

VAH Honors Dillinger

Albert J. Dillinger (left) is congratulated by Charles P. Walker, president of van Ameringen-Haebler, Inc., on the forty-second anniversary of his employment by the company. One of the nation's well-known perfumers, Mr. Dillinger is a past president of the American Society of Perfumers and has the distinction of being VAH's oldest employee in length of service. He has seen the company grow from five employees to almost 500.

New Aerosol Shampoo

Stanley Home Products Co., Springfield, Mass., has developed a new aerosol shampoo for children. Reported to be non-irritating to the eyes, the foam product was developed under the supervision of D. J. Templeton, Stanley's director of chemical production and research.

•

Denny in New Avon Post

Avon Products, Inc., New York, recently named Riley Denney vice-president in charge of branch operations. He joined the company in 1936, became assistant sales manager of the New York office in 1941, sales manager in 1943, and director of branch operations in 1955.

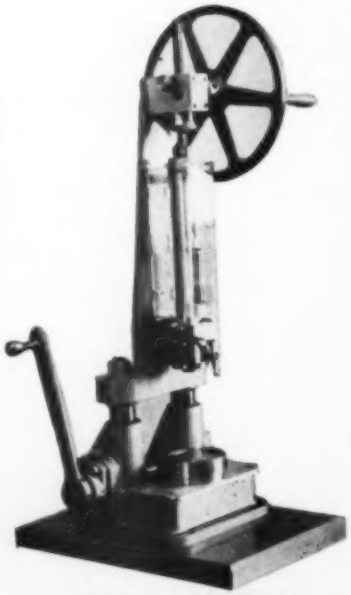
•

Chem. Insecticide Moves

Chemical Insecticide Corp., New York, last month announced that its executive and sales offices will be moved to 30 Whitman Ave., Metuchen, N.J. Telephone number for the new offices will be LIberty 9-2300.

DEVELOPED FOR THE CONSULTING LABORATORY, THIS APPARATUS IS THE ULTIMATE IN FUNCTIONAL DESIGN AND PERFORMANCE

Our apparatus division has been set up to make all items available to the industry. Prices and descriptive literature on request.



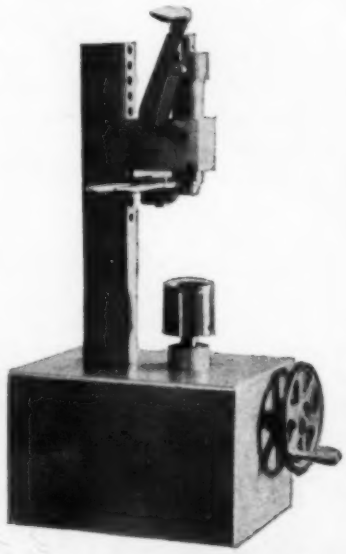
Foresman Liquefied Gas Manipulator

APPARATUS AVAILABLE

Cont. Filling Corp. Clinch Torque Meter

Liquefied Gas Manipulator w/Universal Head
Propellant Manifold for Manipulator
Hand Operated Vial Capper
Change Parts for Vial Capper
One inch opening Can Closing Press
Hydrostatic Test Units
Karl Fischer Pressure Titration Cells
Dead Stop Indicator for Karl Fischer Titrameter
Density Units
High Pressure Test Bombs
Can Sampling Units — Piercing or Valve Actuating
Pressure Gauging Unit — Pressure Balance or Water Filled
Test Ovens — Standard or Custom Built
Instantaneous Chiller Units — Mechanically Refrigerated
Electric Hot Water Test Bath Standard or Custom Built
Hot Water Bath Transfer Baskets Safety Top Tank Racks
Table Tank Rack Combinations
Safety Screen Tubes for Glass Pressure Tubes
Plastic Protective Screens
Gloves and Masks

Apparatus Division
ROBERT A. FORESMAN, JR.
1690 Margaret Street
Philadelphia 24, Pa.



Foresman Hand Operated Vial Capper

Root Speaks at Symposium

The first direct method for quality control of propellants used in aerosol production was described by Morris J. Root, technical director of G. Barr & Co., Chicago, in a paper delivered before the International Symposium on Gas Chromatography. Held Aug. 28 at Michigan State University, East Lansing, Mich. The meeting was a gathering of control and analysis scientists from all over the world.

Mr. Root explained the practical application of the gas chromatographic technique for analysis of propellants upon arrival at the filling plant. The new method, now integrated into the Barr company's overall production quality control system, permits analysis of propellants before transfer to the plant's storage tanks. A sample, contained in a metal cylinder called a "thief", is taken from each shipment tank and submitted to gas chromatographic analysis. The direct method replaces previous indirect propellant analysis methods which permitted only the measurement of certain physical factors, such as pressure and specific gravity.

Mr. Root said that, in addition to the advantages of the technique for quality control, the new method also affords efficiency in identifying the increasing variety of propellants and propellant mixtures used in aerosol production.

•

Bon Ami Moves Offices

The Bon Ami Co., New York, recently moved its executive, general, and sales offices to new quarters at 445 Park Avenue, New York 22, where it will share the headquarters of its parent company, United Dye Works, Inc. Bon Ami's research and development department, however, will remain at 21 West Street.

At the same time the company announced the appointment of Daniel Cunningham as assistant to Virgil Dardi, Bon Ami and United Dye president and chairman. Mr. Cunningham, formerly acted as a consultant for United Dye, through his own brokerage firm.

Solvay Changes 2 in Sales

The Solvay Process Division of Allied Chemical & Dye Corp., New York, recently announced the appointment of Verne W. Aubel, Jr., to the position of assistant sales director. He was formerly manager of Solvay's Philadelphia sales branch, and will be succeeded in that position by Kenneth M. Dillabough, a member of the Philadelphia sales staff.

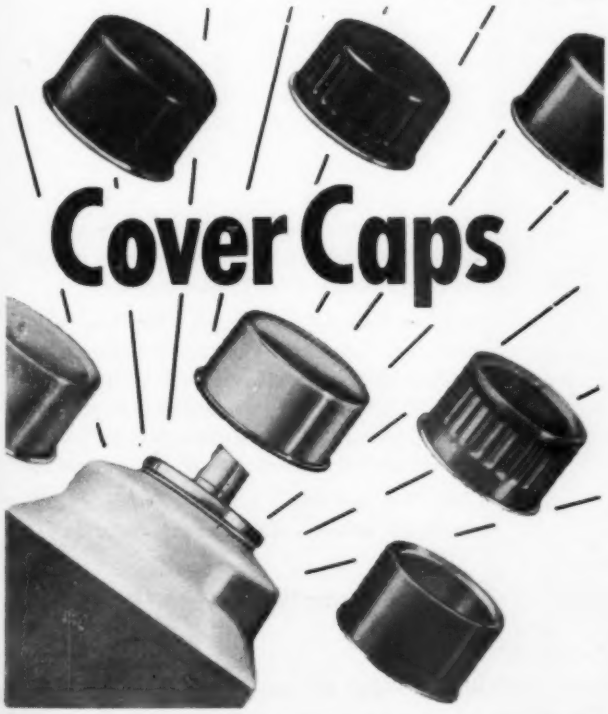
Mr. Aubel joined Solvay in 1939 and has managed the Philadelphia branch since 1954. Mr. Dillabough has been with the company since 1926.

•

Remington to Peerless Tube

William Remington has been named sales manager of the Aerosol Division of Peerless Tube Co., Bloomfield, N. J., a principal producer of aluminum aerosol containers. A veteran of the U. S. Navy and a graduate of Upsala College, Mr. Remington has been on Peerless's sales staff for two years.

THE COMPLETE *Aerosol* METAL CAP LINE



For - 1" Cup Mountings
- Standard And Extra High Valves

#1-S	Dome Style—Plain or Fluted Sides—Over-All Height 13/16" Packed 2000 Pcs.
#1-BD	Button Dome Style—Plain or Fluted Sides Over-All Height 7/8" Packed 2000 Pcs.
#1-X	Dome Style—Plain or Fluted Sides—Over-All Height 15/16" Packed 2100 Pcs.
#HIP	Plain Sided Stacker Style—
#HIF	Fluted Stacker Style— Over-All Height 13/16"—Inside Valve Clearance 3/4" Packed 2100 Pcs. per Carton
#HIS	High Stacker Style—Plain or Fluted Sides — Indented Flat Top—Packed 2000 Pcs. 30# Shipping Weight Over-All Height 15/16" Inside Valve Clearance 7/8"

Standard Colors — Red, White, Royal Blue—Gold Lacquer—Special Colors—Min. 50M, Exact Duplication Lithographing—Min. 500M, No Plate Charge Any Design

West Penn Mfg. & Supply Corp.
Brackenridge, Penna.

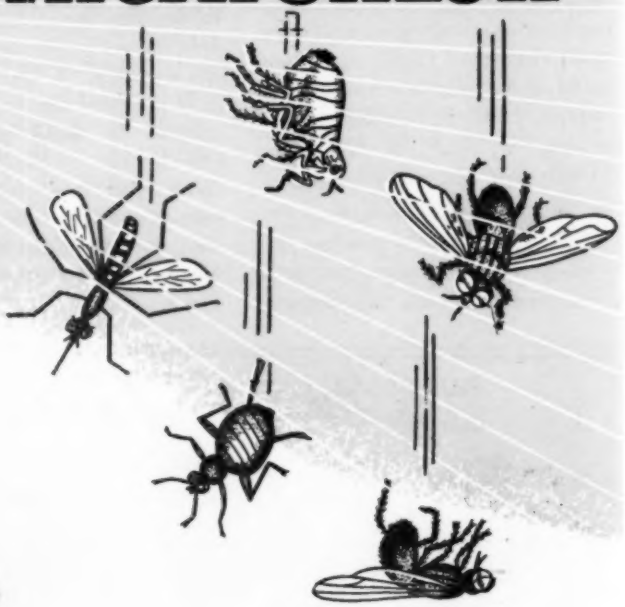
Get knockdown, staydown

impact for your aerosol insecticides

with safe, economical

GEIGY

METHOXYCHLOR



GEIGY METHOXYCHLOR "90"

A granular product containing 90% technical methoxychlor and 10% deodorized petroleum distillate for the preparation of aerosols and residual sprays. It is readily soluble in most solvents used in the preparation of household and cattle sprays. Available in 100-pound drums.

GEIGY METHOXYCHLOR "20"

A solution containing 20% technical methoxychlor for the preparation of household sprays, livestock sprays, aerosols and other products requiring small amounts of methoxychlor in the finished solution. Available in 55-gallon drums.

Yes—put impact in your aerosol and spray formulations with the *quick knock-down, positive stay-down* action of Geigy Methoxychlor.

Safe, economical Geigy Methoxychlor helps build your aerosol sales with its reliable action. Methoxychlor is effective on a variety of insect pests. Its low toxicity to man and animals and long residual toxicity to insects makes this *general purpose insecticide* ideal for aerosol applications.

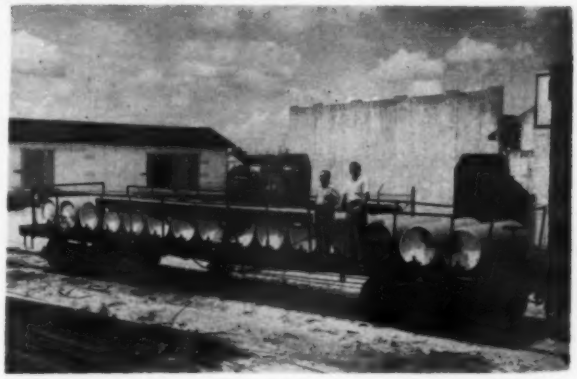
Geigy Methoxychlor is compatible with pyrethrins, allethrin, and piperonyl butoxide.

Geigy *ORIGINATORS OF DDT INSECTICIDES*

GEIGY AGRICULTURAL CHEMICALS • *Division of Geigy Chemical Corporation* • **Saw Mill River Road, Ardsley, New York**

Distributed in Canada by CHIPMAN CHEMICALS LIMITED

First Genetron Rack Car Shipment Made in Florida



What is believed to be the first rack car shipment of propellants to enter Florida for aerosol loading, a shipment of 50/50 mixture of Genetron 11 and 12, was recently received by the National Chemical Laboratories, Inc., in West Palm Beach, Florida. Pictured on the rack car is David Sokol, president and Herbert Z. Sokol, secretary and technical director of National Chemical.

National Chemical Laboratories added aerosols to its product line in 1955, specializing mainly in private-label insecticides and room deodorants. It has a cold-filling line, and has facilities for pressure filling as well. During the past six months, the firm completed several government contracts for aerosol insecticides and deodorants, in addition to its regular aerosol contracts.

Carter Patent Income Up

Carter Products, Inc., in a financial report for the fiscal year ending March 30, revealed that patent royalty payments had been a major contributing factor in the company's spectacular growth over the past few years. Carter's sales increased from 11 million in 1953 to $41.8 million for the year ending March 30, 1957.

Income from royalties on patents, chief of which is a basic patent on pressurized shaving creams, brought the company $2.3 million in 1957, against $90,000 in 1955. This rise in income came mainly as a result of the Supreme Court decision last year upholding Carter's claims over the Colgate-Palmolive Co. and other pressurized shave cream marketers.

•

Labels Called Vital to Sales

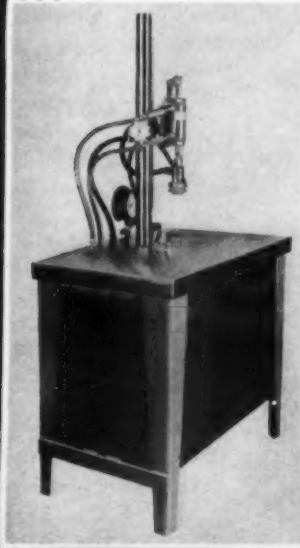
A warning to packagers that loss of sales can be the result of hard-to-read and badly designed labels was voiced at a meeting of all Can Division salesmen of the Crown Cork & Seal Co., Inc., Philadelphia. Frank Campbell, of Crown's sales department, pointed out that salesmen can greatly improve customer service by developing ideas for better packaging designs.

Discussing the pitfalls packagers can fall into in selecting new labels for their products, Mr. Campbell said: "The industrial designer has made tremendous contributions in the packaging field, but unfortunately, many companies do not avail themselves of this service and therefore make mistakes which are not only costly but can be disastrous to the continued development of a brand."

"For example," he pointed out, "one packager recently selected a new label on the basis that his new package 'stood out' when compared with competitive packages. The fallacy of this system is that the packager neglected to compare the effectiveness of the new label in a mass display with similar mass displays of his competitor's packages—which is the way it would be displayed in Supermarkets or drug stores.

Mr. Campbell told the salesmen that they can provide a service to their customers by being completely familiar with new package techniques and stressed their responsibility in calling in the proper assistance — whether it be an industrial designer, the art department of the can company, or the customer's advertising agency. "The use of the expert advice of those who have had such wide experience with packaging can save the canner much waste of time, effort, and material."

ANNOUNCING A LARGE CAPACITY PROPELLENT INJECTOR FOR 16 OZ. AND "KING SIZE" CONTAINERS.



MODEL 14A — Most recent innovation in J. G. line of pressure filling equip.

- Up to 500 CU. CM. capacity
- Accurate within ± and or — .75% on injections down to 5 grams
- Up to 30 injections per min.
- Semi-Automatic Non-Repeat

MODEL 14 — For filling standard size closures

Up to 300 CU. CM. capacity (other spec. same as model 14A)

Vacuum Purge Units
Additional Equip.

Graco Propellant Pumps, Greer Accumulators Stainless Steel Hot Water Baths, Propellant Sight Gauges, Single and Double Product Fill, Crimper, Pressure Burette, and Can Cleaner

MACHINE WORKS

PRESSURE FILLING EQUIPMENT
452-58 W. 46th, N. Y. C.
CIRCLE 6-6373

AEROFLEX "P" DIP TUBES

EVERY SHIPMENT LABORATORY TESTED FOR CRACK RESISTANCE

- Ideal for aerosols, atomizers squeeze bottles and lotion pumps
- Odorless and non-toxic
- Resistant to most filler and propellant chemicals
- Dependable service
- No annealing necessary
- Also nylon Dip Tubes for special applications

Write TODAY for new, illustrated brochure "Extruded Plastics" on company letterhead.

ANCHOR

PLASTICS CO., INC.
36-36 36th Street
Long Island City 6, N. Y.

Florida Aerosol Firm Set Up

The Southeastern Packaging Co., St. Petersburg, Florida, was recently organized in Madeira Beach, a suburb of St. Petersburg, to service marketers of aerosol products in the Southeast. Equipped to do both cold and pressure filling, the firm also has laboratory facilities to assist in formulation problems.

President of Southeastern Packaging is H. J. Andruszko, with G. A. Klitsch as vice-president, and J. M. Andruszko as secretary-treasurer. Mr. Klitsch was formerly supervisor of Crown Can's pressure packaging laboratory and will function as the company's technical and sales supervisor. The Messrs. Andruszko formerly owned and operated the Triple A. Hosiery Co. of Philadelphia.

In addition to its aerosol filling lines, Southeastern will fill powders, pastes, and liquids. To service Northern accounts the company has established a district sales office at 326 Lafayette Building, Fifth and Chestnut Streets, Philadelphia, under the direction of L. H. Crabtree, district sales manager.

•

MM&R Revamps Midwest Sales

Magnus, Mabee & Reynard, Inc., New York essential oils firm, last month announced a revamping of its Midwest sales force. Henry J. Becker, senior sales representative of the company and a veteran of 40 years with MM&R, will limit his territory to Indianapolis and the surrounding area.

He is succeeded in Indiana, Kentucky, and Ohio, by Ad Warner, who has an extensive sales and consulting background in this region among industries serviced by MM&R's product line.

•

Dana's Serra Visits Europe

An itinerary which included visits to Spain, France, England, and other Dana European plants and offices is taking Javier Serra, Dana president, away from his American headquarters in Chicago for about six weeks. Mr. Serra will return to the U.S. on October 15 to direct the company's Christmas promotion campaign.

"Spraze" Shipped to Texas

Heavy demands for "Spraze," Nestle-LeMur's moderately priced aerosol hair spray, have reportedly resulted in car-load shipments of the product to Texas and other Southwest States. Shown receiving the first a tank-car for Furr's Supermarkets, in Lubbock, Texas are (left to right): Don Furr, Furr's vice-president; Cliff Cummings, secretary and treasurer; Roy Furr, Jr., supervisor; Bill Turner, buyer; and Clay Smith, Nestle-LeMur territorial manager.

•

Curtis Changes Ad Set-Up

Helene Curtis Industries, Chicago, recently named McCann Erickson, Inc., to handle the firm's aerosol hair spray "Spray Net" as part of a general realignment of advertising agencies serving the firm's product lines.

"Suave", Suave For Men", and "Lentheric" toiletries have been turned over to Gordon Best & Co. and "King's Men" and "Lanolin Discovery" spray hair dressing will be handled by Edward H. Weiss Agency. The company announced that it will devote $12 million to its advertising budget in 1957 — a $2 million increase over the 1956 budget.

•

Colgate Names E. P. Field

Edward P. Field, Jr., export sales manager of Colgate-Palmolive International, Inc., since 1952, has been appointed manager of the Associated Products Department, it was announced by the Colgate-Palmolive Co. last month. The appointment marks the final phase of the company's program to reorganize its divisions — a program that began earlier this year with establishment of the Household Products and Toilet Articles Divisions.

YOU, TOO, CAN DO THIS...

It's no great trick, today, to produce an aerosol packaged product which embodies all of the attributes essential to its success. You who contemplate entering this lucrative field have many experts to call upon – the container manufacturers, the valve-makers, the commercial fillers, and the suppliers of ingredients and aromatics – all are ready to help you with whatever practical, technical or scientific assistance you may need to develop and package a ready-for-market item primed from the start with high-potential sales appeal. As a leading and long established source of perfume raw materials, aromatic specialties and made-to-order odorants for household and industrial use, we are happy to offer you the facilities of our laboratories for the creation of your product's fragrance. We believe you will be more than pleased with the competence of our service.

—ALWAYS DEPENDABLE—
ODORANTS and DEODORANTS
for INDUSTRIAL and
TECHNICAL USE

▲

MADE-TO-ORDER FRAGRANCES
for PERFUMES, TOILETRIES
and COSMETICS

▲

SUPPLIERS of
AROMATIC CHEMICALS,
BASIC PERFUME and
FLAVOR RAW MATERIALS

FRITZSCHE Established 1871
Brothers, Inc.

PORT AUTHORITY BUILDING, 76 NINTH AVENUE, NEW YORK 11, N. Y.

BRANCH OFFICES *and* °STOCKS: *Atlanta, Georgia, Boston, Massachusetts, °Chicago, Illinois, Cincinnati, Ohio, °Los Angeles, California, Philadelphia, Pennsylvania. San Francisco, California, St. Louis, Missouri, Montreal and °Toronto, Canada and °Mexico, D. F.* FACTORY: *Clifton, N. J.*

D&D to Consolidate Operations

A new subsidiary of DeMert & Dougherty, Inc., Chicago, Mid-America Chemical Terminal, has announced the purchase of the Chicago plant of U.S. Industrial Chemical Co., a division of National Distillers & Chemical Corp., to provide the new home for the general and executive offices of DeMert & Dougherty and its affiliates, Mid-America, Chemical By Products Co., Inc., and Aeropak, Inc. The new plant will also accommodate the aerosol production facilities of Aeropak, Inc., which were severly damaged by fire last May.

The plant, situated on the Chicago Sanitary and Ship Canal just west of Cicero Avenue, became available through a concentration of U.S.I.'s activities at its Tuscola, Ill. plant. An addition to the present building will be constructed this year.

The new aerosol line reportedly will be "one of the most fully-automatic aerosol production facilities in the U.S." The new property covers 11 acres, with space utilized by warehouse buildings, production facilities, and a bulk storage terminal for liquid chemicals.

DeMert & Dougherty will take possession of the new property Dec. 1, by which time the company plans to have all its activities consolidated at the new West 41st Street location.

•

Kurt Altschul in New Post

The appointment of Kurt Altschul to the sales organization of Polak's Frutal Works, Inc., Middletown, N.Y., was announced by the company last month. He will be in charge of marketing and sales promotion and will work closely with planning and implementation of marketing and sales development programs. For the present he will concentrate his efforts along the Eastern Seaboard.

Mr. Altschul has been active in sales management for over ten years and was formerly sales manager of a major New York food manufacturer. He has just returned from an extended study of the company's associate plants in Holland and England.

S/40 FLAKE Shellac

P&S REG TRADE MARK

- FULLY REFINED • DECOLORIZED
- FREE FROM CHLORINE, MINERAL ACIDS AND FREE WATER
- EXCEEDINGLY LOW ACID NUMBER
- HIGHEST HEAT STABILITY AND RESISTANCE TO POLYMERIZATION

F. H. PAUL & STEIN BROS., INC.

235 - Fifth Ave. New York 16, N. Y.

CSMA Reports on Publicity

The second report on aerosol publicity activities, covering the period June 25 to Sept. 5, was issued last month by G. M. Basford Co., administrators of the publicity program of the CSMA's Aerosol Division. The report which appeared in a special CSMA bulletin, revealed that the five-minute aerosol television film is being completed, and also listed a number of successful placements of aerosol publicity material in national magazines and in newspapers throughout the country.

Valley Forge, Pa. was selected as the site for the television film, C. M. Basford said, in view of the "small town feeling" in evidence there. Professional actors from Philadelphia are being used.

The agency reported 60 clippings from a suntan oil photo distributed in mat form to newspapers throughout the country, and predicted further usage before the end of the warm season. Wide editorial acceptance was also reported for the agency's release on the 1957 Aerosol Package Design Competition and story and photograph placements were also reported in *The New York Daily News, Seventeen Magazine, Vogue,* with a future story to come in *The New York Times'* Women's Page.

G. M. Basford also described successful indirect story placements of a story with NEA and *The Wall Street Journal,* and a request for program material from a syndicated radio show which is broadcast on 200 stations throughout the country.

•

Sayres New Canco VP

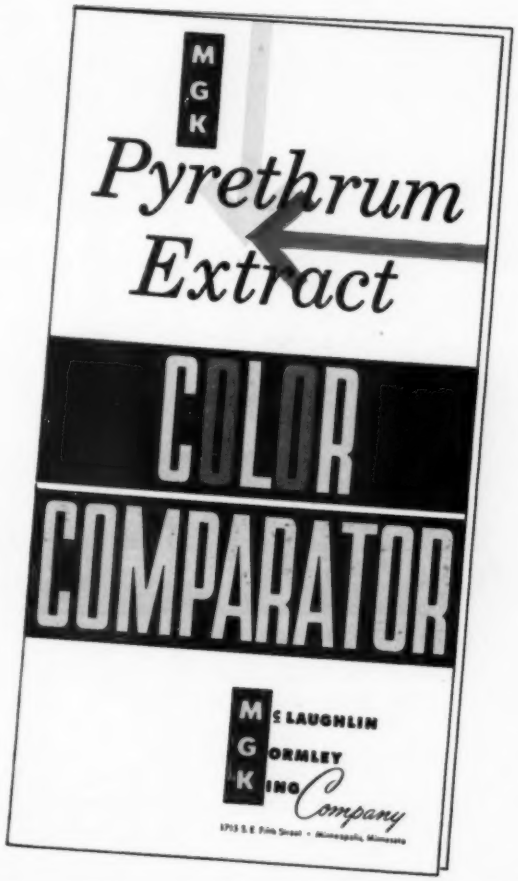
Philip C. Sayres, formerly executive vice-president and a director of Bristol Myers Co., has been elected a vice-president in the executive department of the American Can Co., New York.

Mr. Sayres has spent much of his business career in finance and accounting, and joined Bristol-Myers Company as comptroller in 1931. Four years later he became assistant treasurer and comptroller, then secretary-treasurer and in 1946 executive vice-president.

NON-STAINING

Aerosols

You can completely eliminate the aerosol color staining problem. MGK Pyrocide 175 RC is a 20% concentrate so light that, as ordinarily sprayed, no color can be detected even when sprayed on a white fabric. There is no loss of killing power and the shelf life of aerosols properly formulated with MGK Pyrocide 175 RC is guaranteed to equal or exceed that of aerosols made with any extracts of the same pyrethrum content. Developed during the last three years, Pyrocide 175 RC has been tested in actual use for over one year and since being offered in May of this year, it has been specified by many large aerosol manufacturers.



CHECK YOUR *Aerosol* COLOR

Send for this Color Comparator. With it you can quickly and accurately visually check the exact color of your formulations. This excellent Color Comparator is equally valuable in sales work and laboratory.

MGK McLAUGHLIN GORMLEY KING Company

1715 S.E. Fifth Street / Minneapolis, Minnesota

McLAUGHLIN GORMLEY KING COMPANY
1715 S. E. Fifth Street • Minneapolis, Minnesota

Please send full details on how to formulate non-staining aerosols with Pyrocide 175 RC.

Also send *free* Color Comparator.

*Name*_____

*Address*_____

*City*_____ *Zone*____ *State*_____

THE FAST,

SURE WAY

TO APPLY

AEROSOL

OVERCAPS

The CONSOLIDATED

MODEL H-O-F CAPPER

. . . . ***Automatically*** sorts and applies all the various types of aerosol caps now being used.

. . . . ***Applies*** odd shapes as well as conventional types.

. . . . ***Equipped*** with variable speed controls and can be arranged for speeds from 60 to 250 caps per minute.

. . . . ***Changeover*** from one size container to another can be made easily and quickly.

. . . . ***Easily*** fitted into any aerosol filling line.

If you are using aerosol containers, be sure to get all the facts about the Consolidated H-O-F Capper for applying the overcaps before you buy.

Write for complete information

CONSOLIDATED PACKAGING MACHINERY CORP.

1400 West Ave., Buffalo 13, N. Y.

Antibiotic Price Cut

A reduction of $100 per kilo in the price of neomycin sulfate U.S.P., one of the most versatile of topical antibiotics, was announced last month by the Fine Chemical Division of American Cyanamid Co., New York. The announcement also reported that preparations for a substantial increase in manufacturing facilities are well advanced at Cyanamid.

The price of neomycin sulfate U.S.P. was reduced from $450 to $350 per kilo, and the technical or veterinary grade neomycin was reduced from $200 to $140 per kilo. This first large price reduction in several years is reported to be the result of continual improvement of production yields achieved at Cyanamid's Princeton, N. J. plant where the material is being manufactured.

Originally discovered by Dr. Selman A. Waksman (who received the patent) the antibiotic has found widespread use in human and veterinary medicine. Studies carried on in other fields have yielded significantly encouraging data as to effectiveness under various conditions of use. Currently under investigation are aerosol cosmetic and industrial applications.

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Colgate Appoints Green

The appointment of C. Gilbert Green as general sales manager of the Toilet Articles Division of the Colgate-Palmolive Co. was announced recently from the company's New York headquarters. At the same time the company announced that H. P. McClure has been named to the newly-created position of general sales and promotion manager of food and drug store chains. The two men have a combined service total of more than 60 years in Colgate sales.

•

Williams Bought by Drug Co.

J. B. Williams Co., 117-year old toiletries firm of Glastonbury, Conn., was acquired by Pharmaceuticals, Inc., late in August, and will operate as a wholly-owned subsidiary of the pharmaceutical firm. Charles T. Lipscomb will remain as Williams president.

Canco Announces Aluminum Research Project

American Can Co., New York, has announced the formation of a special division in its research department to find commercially practicable methods of making aluminum cans. Canco president William C. Stolk revealed last month that the company's research department has perfected techniques for producing both aluminum alloy and aluminum-coated steel-plate cans on a pilot plant basis. The current difficulty, Mr. Stolk pointed out, is the fact that aluminum cans cannot be turned out at the high speeds possible for tinplate.

Another major tinplate container producer, Continental Can Co., announced earlier this year that it will began test-marketing of aluminum cans this fall. An aluminum producer, Kaiser Aluminum & Chemical Corp., also has announced plans for fall production of aluminum cans, from its Wanatah, Ind. plant. However, both have indicated that the higher prices will probably make their cans practical for use in specialty products, including aerosols.

According to Mr. Stolk, "the present restricted use of aluminum for containers in this country is directly related to the metal's higher cost, compared with steel." He pointed out that because Canco's tinplate costs have risen 91% in the past ten years, the gap between costs of the two metals "has been narrowing constantly." The company's new aluminum division will have its headquarters at Basking Ridge, N. J.

•

Cyanamid Fills Top Posts

The American Cyanamid Co., New York, last month created the new post of board chairman and named a new president. Kenneth C. Towe, president since 1952 and a member of the company since 1926 was elected board chairman. To be president and chief executive officer the company named Dr. Wilbur G. Malcolm, formerly vice-president for marketing.

Dr. Malcolm joined Lederle Laboratories as a bacteriologist in 1934 when it was a wholly-owned subsidiary of Cyanamid. He was named vice-president of the parent concern and general manager of Lederle when the subsidiary became a division in 1946.

•

Norwich Construction Begun

Construction of four new buildings, as part of a long-range expansion program, was begun Sept. 11 by Norwich Pharmacal Co., Norwich, N. Y. The new structures will add 13,000 square feet of plant space to existing facilities, and will cost approximately $350,000.

Krylon Begins Campaign for Christmas Sales

Krylon, Inc., Norristown, Pa., last month announced "the greatest advertising campaign in the history of the spray paint industry" to boost its line of Christmas decorating colors. The company will advertise in *Life*, *Ladies Home Journal*, and *Better Homes & Gardens* and direct an extensive promotional and advertising campaign at jobbers and dealers. The campaign will include a direct mailing to 50,000 retailers.

In the photo Krylon executives James W. Bampton, president, (left) and Richard C. Newbold, sales vice-president, admire new Krylon Christmas displays.

Alpine NAMEE

NEW CHEMICAL DEODORANT

01% in Aerosol Room Deodorants Effectively Reduces Household Odors.

Safe
Pleasingly Fresh
Not A Methacrylate

Have you examined our Sachet Odors?

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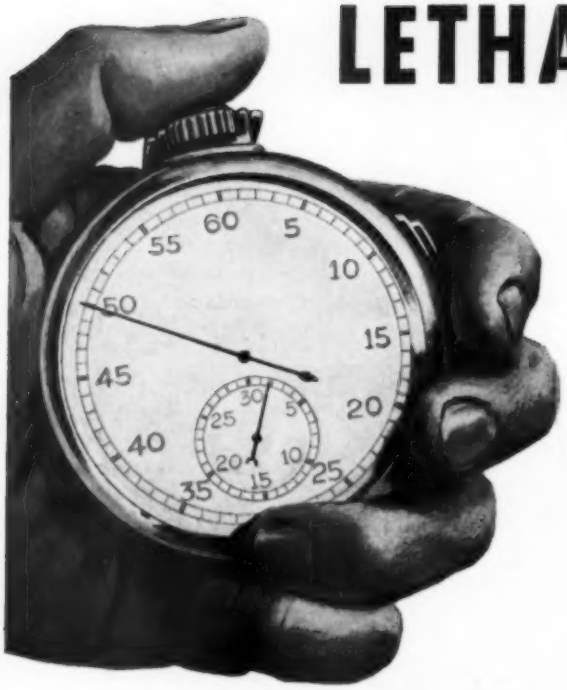
LILAC
PINE
APPLE BLOSSOM

ALPINE AROMATICS INCORPORATED
Metuchen, N. J

Clock them as they drop . . . and you'll insist on LETHANE



By laboratory tests your sprays or aerosols may meet the official minimum requirements. But, will your customers be satisfied with a product with slow initial knockdown? The average consumer knows little about Peet-Grady tests . . . O.T.I. standards . . . knockdown agents . . . synergists. He buys *your* product, uses it, and looks for quick knockdown; he expects insects to drop as if hit by lightning.

Formulate your product with LETHANE and your customers will get their money's worth. LETHANE is a knockdown agent that brings insects down fast —during those crucial first two minutes when the customer wants results. You get fast, high knockdowns with low, economical concentrations of LETHANE. With suggested percentages of LETHANE, savings of up to 3c per unit are possible.

These are facts—backed up by year-after-year sales increases of millions of insecticide units used with complete safety by customers in almost every country in the world. Write us for detailed information on the use of LETHANE in fly sprays and aerosols.

LETHANE *is a trade-mark, Reg. U. S. Pat. Off. and in principal foreign countries.*

Chemicals for Industry

ROHM & HAAS COMPANY

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Representatives in principal foreign countries

ConCan Appoints Lab Chiefs

The new Central Research and Engineering Division of Continental Can Co., New York, has appointed two laboratory directors as part of the division's current expansion program. Dr. Kenneth W. Gardiner, former director of the research laboratory for Gardiner Instrument Co., Cambridge, Mass. will head the general chemistry laboratory and Dr. Charles Spiegl, who had been associated with the Atomic Energy Commission at the University of Rochester, will be in charge of the toxicological laboratory.

Gardiner

Spiegl

•

Shulton Expands to UK

Great Britain recently became the sixth foreign country in which Shulton, Inc., Clifton, N. J., has a foreign subsidiary, according to an announcement by David Gregg, Jr., International Division manager of the cosmetics firm. He announced the creation of Shulton (Great Britain) Ltd. and the appointment of Geoffrey S. Sladden, former sales manager of Richard Hudnut, Ltd., as manager of the new subsidiary.

According to Mr. Gregg, the British company will establish a major source of supply of raw materials necessary for the overseas manufacture of Shulton products in England. The British company will act as a source from which other Shulton overseas organizations may draw, and also plans to supply toiletries and proprietary drugs for export.

•

Merck & Co. Names Two

Merck & Co., Inc., of Rahway, N. J., last month announced two changes in its marketing organization, as part of an accelerated sales program in plant products. J. J. Simmons has been transferred to the sales department, where he will be responsible for sales of "Gibrel" and other plant chemicals.

J. W. Kennady, formerly manager of product sales for agricultural chemicals, Diamond Alkali Co., has joined Merck's market planning department as plant products manager. Prior to his Diamond Alkali position, Mr. Kennady was associated with the USDA for several years.

•

Pennsalt Expands in Canada

Pennsalt Chemicals Corp., Philadelphia, has announced the formation of a wholly-owned subsidiary in Canada. The new company will be known as Pennsalt Chemicals of Canada, Ltd., and is expected to provide improved customer service for the expanding chemical specialties market in Canada.

William B. Billingsley, who has directed Pennsalt specialty sales since 1954, has been named vice-president of the new subsidiary and resident manager of its operations. Before joining Pennsalt, he was associated with Canadian Industries, Ltd.

According to William P. Drake, Pennsalt president, the company's projected expansion plans contemplate early construction of manufacturing and warehousing facilities in eastern Canada.

•

Mojonnier Buys Munton Co.

Mojonnier Associates, Inc., Franklin Park, Ill., has announced the acquisition of the Munton Manufacturing Co., also of Franklin Park. The acquisition of this additional manufacturing facility will permit Mojonnier to make its own hydraulic and air cylinders.

•

New Dow Plastics Plant

Dow Chemical Co., Midland, Mich., has announced that it will construct a multi-million dollar plant in Bay City, Michigan for the production of polyethylene plastic products. The plant, scheduled for completion in Oct. 1958, will be supplied with raw materials from Dow's petrochemical group and from Bay Refining Corp., a Dow subsidiary.

Dow announced that it will make a "major effort" in the polyethylene business. In the aerosol field, polyethylene is used in dip tubing, various other valve components, and for some overcaps.

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Let Emson build a better consumer package for you. . . . A Metered Valve with a package designed by Emson.

Call or write Emson Research to discuss your problem. Ask for a sample of the Emson stainless steel container, and discover how your product may be packaged . . . by . .

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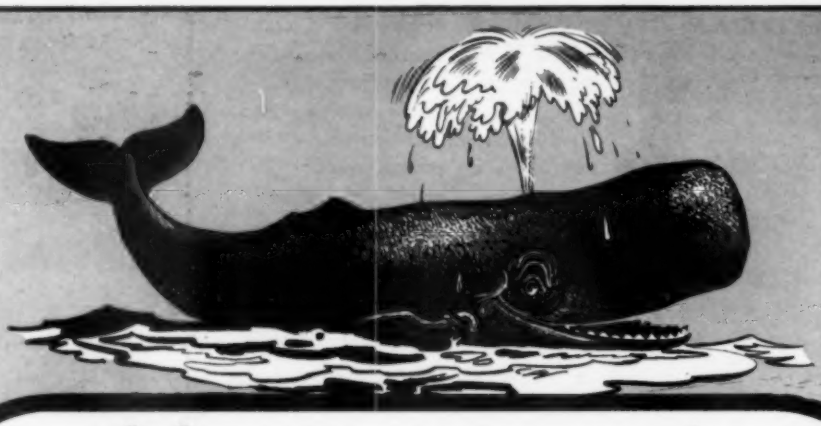


"let us spray"

Our massive friend pictured above, sprayed in a big way long before the birth of another giant, the modern aerosol industry.

American Cholesterol Products, Inc. is proud to have contributed to the whale of a growth of this colossus by developing unique and widely used non-irritating, hypo-allergenic lanolin derivatives, chemically designed for aerosols.

ACETULAN™ offers unlimited possibilities for new effects in aerosol formulations. It is a stable, 100% active, water-thin, liquid derivative of acetylated lanolin alcohols. Acetulan was literally made to order for aerosols. It has proven its value in actual practice in many types of aerosol products where it acts not only as a plasticizer and co-solvent for various components, but also as a penetrant, emollient, and protective agent for skin and hair. It is an excellent plasticizer for PVP and related compounds and is soluble in and acts as a solvent for most waxes, oils, propellants and alcohols. Valve clogging, solubilization difficulties and material incompatibilities are practically eliminated in the aerosol products formulated with Acetulan. Only ½% to 3% of Acetulan is sufficient to impart its desirable properties to skin and hair.

MODULAN® is the acetyl derivative of pure lanolin with superior solubility, emollient and super-fatting properties.* It is practically odorless and non-tacky imparting soft waxy protective films to skin and hair. Small percentages of Modulan included in aerosol shave, shampoo, sunburn, and hand cream formulations, result in marked conditioning effects.

SOLULAN 98™ is a new, decidedly different polyoxyethylene derivative of lanolin. It is a 100% active, anhydrous, clear liquid product with complete solubility in water and alcohol in all percentages. The unique character of this lanolin derivative is obtained by balancing hydrophylic polyoxyethylene with hydrophobic acetyl groups. The result is persistent emollient films, and unusual solubilizing properties which lend themselves to the creation of entirely new effects in aerosol formulations. Try Solulan 98 for that difficult solubilization problem whether you wish to solubilize water or oil soluble materials. Its versatility, ease of incorporation and beneficial effects will surprise you.

AMERCHOLS® The Amerchols, particularly the low viscosity, liquid multi-sterol Amerchol L-101, are widely used in aerosols. These products, which represent lanolin cholesterols in their most active form, are excellent plasticizers for PVP films and have the multiple advantages of being unusual emollients, penetrants, and non-ionic, surface-active agents which are safe for the most delicate tissues. The Amerchols have been used for many years in all types of cosmetics and pharmaceuticals and are among the first lanolin derivatives to be used in modern aerosols. Many emulsion aerosol formulations contain Amerchols which impart to these products the same beneficial characteristics for which they are noted in non-propelled products.

RICILAN A™—Another exclusive development of American Cholesterol Products, Inc. Ricilan A is a viscous liquid wax synthesized from components of lanolin and castor oil. It is a stable, almost odorless, polymeric ester with properties which make it intriguing to the cosmetic and pharmaceutical chemist. Ricilan A is both alcohol and mineral oil soluble and imparts an emollient 'feel' to skin and hair which is unlike anything hitherto. It is a natural for aerosols.

Write to our research laboratories for literature, references, suggested formulas and samples.

*U. S. Patent No. 2,725,334

AMERICAN CHOLESTEROL PRODUCTS, INC. AMERCHOL

American Cholesterol Products

• INCORPORATED •

AMERCHOL PARK EDISON, NEW JERSEY

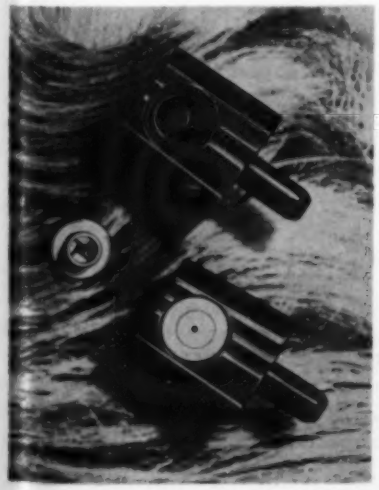
Products—
Processes—
Bulletins—

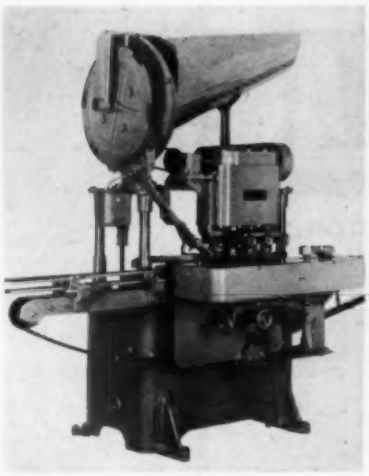
Newman-Green Valve Model

Newman-Green, Inc., La Grange, Ill., has added a new valve model to their expanding line of aerosol valves. Designated as "B-14-3," the new model is designed to provide efficient mechanical break-up spray for a variety of applications.

The new valve, which has been the subject of extensive field testing, is available in large quantities in either Buna or neoprene gaskets. The base price in a one-inch mounting cup is $45 per thousand. It can also be obtained with stainless steel springs and double tin plated mounting cups and eyelets at a small increase over the base price.

The new break-up model is expected to improve valve operational efficiency in packaging hair lacquer, cologne, personal deodorant, window cleaners, and certain other low pressure formulations where fine atomization is a factor. It is also available for glass or plastic containers and the valve head can be supplied in a variety of colors. The valve head is interchangeable on the standard cup and stem mountings. Samples are available by writing to the company at 151 Interstate Road, Addison, Ill.





Resina Capping Machine

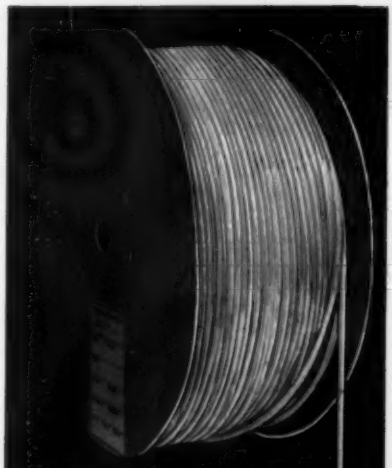
When the feeding chute on the Resina "Model RU-120" capper is filled, the tumbling action of the caps in the hopper is automatically stopped. The capper will resume tumbling automatically only when the feeding chute is ready to accept more caps. The machine is being manufactured by Resina Automatic Machinery Co., Brooklyn 31, N. Y.

The new shut-off feature eliminates unnecessary tumbling of caps, thus minimizing the possibility of scuffing and marring. Tumbling takes place in the hopper only when the feed chute needs caps. The capper is said to be capable of speeds up to 120 per minute (higher, depending on cap size), is fully automatic, and is capable of handling a wide range of cap and container sizes. It is equipped with two one-half horsepower motors and an eight-foot conveyor.

•

Norelco Diffractometer

A new Norelco X-ray Diffractometer, redesigned with a number of changes to extend sensitivity, accuracy, and application range of the instrument, has been announced by the Instruments Division of Philips Electronics, Inc., Mt. Vernon, N.Y.



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POLYETHYLENE TUBING for AEROSOLS

. . . Now available in neatly traversed spools . . . no kinks no snarls!

Available on spools in lengths up to 3000 feet. Prevent costly delays—save time and money.

HYDRALENE NO. 35 polyethylene tubing will not split or crack, even with tight friction fits.

Features:

- Only finest quality virgin material.
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- Also available in coils or cut pieces.

This tubing is the result of years of careful development work in the aerosol field.

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FOR AEROSOL HAIR AND SHAVING PREPARATIONS, SHAMPOOS, PHARMACEUTICALS

ETHOXYLAN

An Improved WATER and ALCOHOL SOLUBLE Lanolin Derivative

Here is a lanolin product that will give your preparations superior emollience in a large variety of applications at minimum cost, without lanolin's greasy effects.

ETHOXYLAN is available in two forms —check these advantages:

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- Anhydrous waxy solid—100% soluble in water; sufficiently soluble in alcohol as an additive to aerosol hair products.
- Compatible with standard propellants and film forming materials.
- Will not clog valves or produce the sticky film associated with lanolin.
- A non-ionic surfactant, foam enhancer, foam stabilizer.
- Produces crystal clear aqueous and alcoholic solutions.
- Imparts emollience, softness and lustre to hair when added to shampoos and hair preparations.
- Auxiliary emulsifier, solubilizer.

ETHOXYLAN 50

- A 50% active, crystal clear, free-flowing aqueous solution.

Draize, Woodward and Calvery procedure on the effects on the eyes of albino rabbits conclude that Malmstrom's Ethoxylan may be considered safe to use in formulations which come in contact with the eyes.

Either way, you should check the benefits of ETHOXYLAN —write for BULLETIN and SUGGESTED APPLICATIONS.

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211 Hertel Avenue
Buffalo 7, New York

C.S.M.A. 1957 Aerosol Awards Competition

Awards will be made in the following ten classifications:

1. **Insecticides, Repellents and Moth Proofers**
2. **Room Deodorants**
3. **Paints, Enamels, Other Protective Coatings and Paint Remover**
4. **Other Household Products — polishes, glass cleaner, rug shampoo, water repellents, etc.**
5. **Shave products**
6. **Hair preparations**
7. **Other Personal Products — shampoos, body deodorants, sun tan oil, drugs, etc.**
8. **Medicinal and Pharmaceutical Products**
9. **Industrial Products — lubricants, stencil inks, belt dressings, etc.**
10. **Glass and Plastic Aerosols — all products**

Entries close October 15th. All entries should be forwarded to the committee as soon after September 15th as possible. To be eligible for entry a product must be on the market and have been freely offered for sale prior to September 1, 1957. Only one entry may be made by any marketer or brand owner in any one class.

Entry forms available from
The Aerosol Awards Committee of

Chemical Specialties Mfrs. Assn.

50 East 41st Street **New York 17, N. Y.**

Builders Announces New Aerosol Cold Filler

Builders new small production-line cold filler is completely automatic. A cold box temperature of —40°F. and a cold coil temperature of —50°F. are automatically maintained.

A small production line cold filler, capable of filling 1000 six-ounce cans per eight-hour day with use of only one operator, has been announced by Builders Sheet Metal Works, Inc., New York. The unit will reportedly allow two different propellants to be filled, and 20 cans and product to be precooled in the cold box.

The complete assembly includes an air crimper, air compressor, and laboratory scale, all mounted on a formica table top. The refrigeration unit is of the water-cooled open type design, with the water flow fully automatic. A liquid line heat exchanger is employed to increase efficiency and to eliminate suction line frosting.

To Sell Gas Chromatograph

The Chicago Apparatus Co., Chicago 22, Ill., has announced that it is now stocking the Beckman Model GC-2 gas chromatograph and can offer immediate delivery. With the "Model GC-2", the company says, compounds with boiling points up to 350°C. can be analyzed quickly and accurately.

•

Dow Chlorothene Booklet

A new booklet outlining properties and uses of Chlorothene, Dow Inhibited 1,1,1-trichloroethane, is now available from the Solvent Sales Dept., the Dow Chemical Co., Midland, Mich. The 16-page, two-color booklet contains the most complete information yet released on this new cold-cleaning solvent, which has found extensive use in spray methods of cold cleaning.

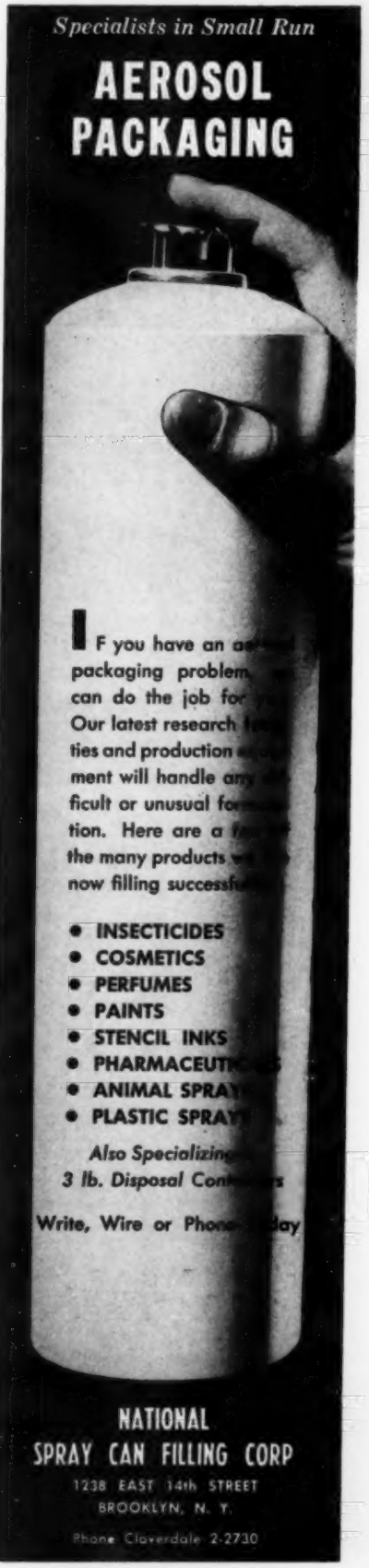
The booklet points out that chlorothene is one of the safest solvents available from the standpoint of toxicity, and also offers a low fire hazard since it has no fire or flash point. Its other advantages include high solvency, low corrosion, high stability, and economy, the booklet points out.

•

Schimmel Publishes Briefs

The second volume of collected "Schimmel Briefs", covering the years 1951 through 1956, is now available from Schimmel & Co., Inc., New York. The bound volume, with a detailed subject index, comprises a valuable reference work for those engaged in the development and production of cosmetic preparations.

Many of the articles included in Volume II provide information on some of the newer raw materials for cosmetics such as special detergents, emulsifiers, and antiseptics. Other articles are devoted to methods of making specific products, as for instance, aerosol hair lacquers. The price of the volume is $10 in the U. S. and $10.25 elsewhere. Inquiries should be directed to Schimmel & Co., Inc., 601 West 26th Street, New York.



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that have proved their effectiveness in the production of industrial and consumer products

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OIL GARDENIA..... No. 3125
OIL BOUQUET E.T. No. 3126
OIL BOUQUET P.C. No. 3127
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  Do not tend to develop resistant organisms.
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  Stable in the presence of water.
- Compatible with propellents.
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"The FIRST producer of the FIRST antibiotics"
TYROTHRICIN · GRAMICIDIN

As we go to Press . . .

Nitrogen Propellant Development Reported—Termed "One of Most Important Advances in Aerosols"

PRODUCTION of nitrogen-propelled aerosols, termed "one of the most important advances in the history of pressurized packaging," will begin this Fall at Aerosol Techniques, Inc., according to an announcement made late last month by H. R. Shepherd, president of the Bridgeport custom filling company. The development is the result of joint research between Aerosol Techniques and Precision Valve Corp., Yonkers, N. Y.

Scheduled to come off the ATI lines is a series of aerosol products, hitherto deemed impractical, which now become a reality through the use of the nitrogen propellant. Among the first such products will be a push-button toothpaste, cleansing cream and hair dressing, and a line of food condiments and syrups is currently being tested. The inertness of nitrogen will permit delivery of the product without physical disturbance by the gas.

"The use of nitrogen is an established technique which goes back even prior to the present aerosol period and has been successfully applied in the food industry in different applications for some time," Mr. Shepherd said. "Now at last we are able to use nitrogen in the cosmetic and pharmaceutical fields, where it can be so important."

"Production of the nitrogen-propelled aerosols not only means that many new products become available to the pressure packaging marketer, but costs will also be sharply reduced," he explained, pointing out that the nitrogen propellant is much less expensive than fluorinated chlorinated hydrocarbon propellants.

The nitrogen-propelled operation will be in addition to ATI's three refrigerated lines, Mr. Shepherd said.

Technically, the advantages of nitrogen are overwhelming. From the important cost standpoint, it is estimated that the cost of propellant in 1000 six-ounce cans will be as little as 15 cents! Since the nitrogen is almost completely unstable, contributory corrosion due to chemical breakdown of the propellant will be completely nonexistent. The fluorinated hydrocarbon propellants, on the other hand, are comparatively unstable in certain product types, and result in a certain amount of hydrolysis.

ACCORDING to Robert Abplanalp, president of Precision Valve, the development of this new pressurized packaging technique will open up "fantastic" fields to the custom filler and to the new marketer. "In fact," he says, "just on the basis of this new idea, many custom fillers will be able to call on 500 new accounts!" In addition, he points out that it will open up the possibilities of using container materials — particularly aluminum — hitherto little used for certain highly corrosive product types.

As possible applications for nitrogen-powered products, Mr. Abplanalp suggested baby oils, burn preparations, liquid detergents, glass waxes, and a number of food and pharmaceutical applications never before thought practical for aerosol dispensing. "With nitrogen as the propellant," he pointed out, "the chilling effect resulting from the fluorinated hydrocarbon propellants is eliminated, thus making the nitrogen-propelled product perfect for use in baby oils, burn preparations, and a number of other applications where any chilling of the skin surface would be either undesirable or actually cause physical damage to the tissue. Use of nitrogen will also eliminate any second thoughts about the practicability of pressure packaging a wide range of aerosol pharmaceuticals.

The new development (which, it should be noted, delivers a pressure dispensed stream without foaming or aeration can also be adapted to deliver a drop-by-drop delivery. In this form it is expected to find extensive use in an additional range of pharmaceuticals, foods, and beverages; and its application for food products is, in the words of Mr. Abplanalp, practically limitless. He sees early use in syrups, food sweeteners, and a host of viscous and non-viscous food and beverage preparations that may not have been practical to pressure-package in their present form.

As to the problem of displacement of air from the container in the filling operation, little trouble is contemplated on this score. Vacuum displacement, use of product volatiles to replace the air, purging equipment, and all other methods currently used in the food field will be applicable in the nitrogen-powered aerosol. Nitrogen's flat temperature-pressure curve will permit sterilizing of the container and product either before it is pressurized or after, Mr. Abplanalp points out.

A major feature of the new development is that the user can closely control the flow of the product, to a degree seldom previously achieved. Dispensing can be measured a drop

at a time or several drops at a time—thus opening the way to possible substitution of the aerosol for the eye-dropper and a number of other crudely-measuring pharmaceutical gadgets.

The nitrogen package utilizes conventional valves and containers for most products contemplated for use under the new system. With the majority of the products so far tested, it is reported that slight variations of the dip tubing and other minor alterations in the valve mechanism can result in the satisfactory delivery of even the most viscous and hard-to-handle liquid products.

From a practical standpoint, (and from the standpoint of research possibilities in all product types) this new development would appear to be of great imediate interest to the aerosol industry, particularly because of the long delay in acceptance of fluorinated hydrocarbon propellants in food products by the Food and Drug Administration. Nitrogen is expected to find almost immediate use in a toothpaste product, and Aerosol Techniques' report would seem to indicate that test runs of the product are presently being conducted.

Success of this first nitrogen-propelled aerosol will be watched closely by the "cosmetic and sundries" industries, particularly in view of the recent introduction by a leading tooth paste marketer of a product in a polyethylene squeeze bottle. The nitrogen-propelled aerosol toothpaste, it would appear, will have two major advantages over the polyethylene-packaged product. The first, and easily most important, is that of previously-mentioned cost. Since the propellant is a major cost contributor in most aerosols, a marked reduction in propellant price is expected to bring the price of an aerosol considerably below that of a polyethylene container. In a competitive market product such as toothpaste, packaging cost has always been a prime consideration.

The second advantage of the new nitrogen-propelled aerosol is that it is used in its normal standing position—simply picked up and pressed out of a spout. There is none of the turning (with inevitable agitation of product) necessary to squeeze out the product, as there is in a polyethylene bottle. This will tend to further reduce the chances of undesirable aeration, (a questionable factor in the nitrogen-propelled product anyway, since the air will have been largely, or completely removed from the container).

The nitrogen aerosol may well be the major turning point in the quest of the aerosol industry to really "break in" to the fantastic market for food products in pressurized containers.★

First Food Product Out

"A major breakthrough in the dispensing of pressurized foods in non-foamy, non-aerated sprays or streams," the test marketing of a barbecue sauce by Anderson's Foods, Inc., a division of G. F. Heublein Co., is reported in the September issue of *Food Engineering*, a McGraw-Hill publication. Called "Sizl-Spray," it is being distributed on a test marketing basis in the Los Angeles area, but is expected to hit the national market in time to catch some of the late-season outdoor barbecue season in the West and the South.

Packaging is being done by Western Filling, utilizing a ConCan domed container, with a Precision valve (with a double-coating mounting cup). *Food Engineering* reports that the propellant is a mixture of nitrous oxide and carbon dioxide. Western Filling's line can currently turn out 90 cans per minute, though "plant production can be jumped to 225 per minute by simply adding more gassers and shakers," the article indicates.

"One of the most likely candidates for the next aerosol product is cake frosting. Other products now under consideration include fruit concentrates for drinks, toppings, salad oils, chocolate and table syrups, and meat tenderizers."

•

Texas Aerosol Co. Formed

Texas Aerosols, Inc., a new filling company in Houston, Texas, began its first aerosol production early last month. The plant, which has two filling lines, will have a capacity of 4.5 million containers per month, according to B. R. H. Mahone, secretary and sales manager.

Karabatsos to Velsicol

Velsicol Chemical Corp., Chicago, has announced the appointment of Kimon T. Karabatsos as Director of Government Relations. For the past two years, Mr. Karabatsos was director of legislative and special services for the National Agricultural Chemicals Association and prior to that was administrative assistant to Rep. A. L. Miller of Nebraska, author of the Miller Pesticide Residue Amendment.

In 1956, Mr. Karabatsos was named to the President's Conference on Farm Safety and served on a special commission on industry mobilization in the event of enemy attack. He also served as Legislation Liaison Officer for the 50th Anniversary Committee of the Association of Food and Drug Officials of the U.S. While administrative assistant to Rep. Miller, Karabatsos wrote many papers on federal food and drug laws and has presented lectures on this subject at various schools throughout the United States.

As director of government relations for Velsicol, Mr. Karabatsos will headquarter in Washington, D. C.

•

DuPont Cuts Mylar Prices

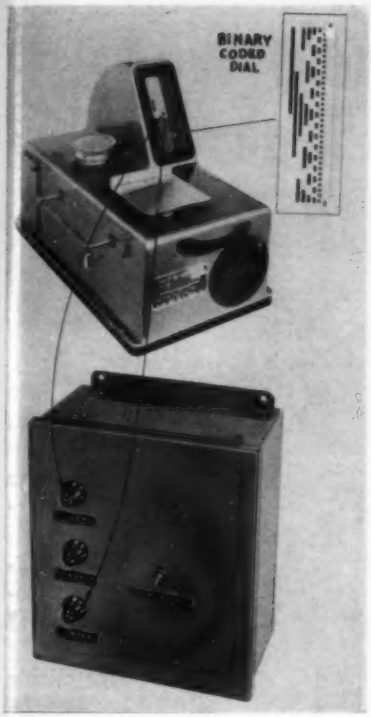
The DuPont Co., Wilmington, has reduced the price on most types of "Mylar" polyester film by 25 cents per pound, effective Sept. 3. The reduction applies to all coated and heat shrinkable types of "Mylar", and to types A and D in all gages.

Strongest of the plastic films, "Mylar" is resistant to attack by most chemicals and retains its properties under extremes of heat and cold. In the aerosol field, it has been used for experimentation to discover a two-piece container for the food packaging field.

•

P&S Appoints Silver

Polak & Schwarz, Inc., New York, recently announced the appointment of George Silver to its recently expanded Industrial and Odormasking Division. He was formerly in the textile dyeing and paint industry and is reported to be well acquainted with technical problems in the chemical field.



New Weight Classifier

A new basic weight classifier has been announced by The Exact Weight Scale Co., of Columbus, Ohio, for classifying and process control of products and packages by weight. The new classifier is also expected to find use in production line inspection of metal assemblies for missing parts, and of finished packages for correct contents.

Adjustable crystal photocells are mounted adjacent to the visual dial on the "Shadograph" scale. The photocells provide a precise and reliable electric signal when the present weight limits, or allowable tolerance settings, are reached.

A controller is used with the scale. This unit operates relays to open and close circuits when the weight is reached, and it may be used to actuate automatic transfer mechanisms, operate counters, visual signal lights, or alarm signals.

The equipment will be displayed and demonstrated at the National Chemical Exposition at the New York Coliseum from Dec. 2-6.

•

Data on Isopropyl Myristate

Sole Chemical Corp., Chicago, recently issued a special technical bulletin describing its distilled isopropyl myristate, a non-greasy oil-soluble solvent and spreading vehicle suitable for aerosol formulations. Other isopropyl esters, including palmitate and oleate, will be made available by Sole Chemical in the near future. Copies of the technical data are available by writing to the company at 27 E. Monroe St., Chicago 3.

•

Ethylan Bulletin

The Robinson Wagner Co., Inc., New York, has issued a new product bulletin on its "Ethylan", described as "a clear, golden yellow, oily liquid containing approximately 35% by weight of pure, unreacted lanolin dissolved in a lanolin derivative vehicle." The Robinson Wagner product can be used to offset sensitivity of PVP films to damp or wet weather conditions, by incorporation of a small amount of "Ethylan" in the hair lacquer concentrate.

The product is described as being soluble in ethanol and PVP alcohol mixtures, and compatible with aerosol propellants.

•

British Chemical Volume

The Association of British Chemical Manufacturers recently published a new book entitled "British Chemicals and Their Manufacturers—1957." It contains products, manufacturers, trade marks, and trade names, and copies are available free "to all persons or firms genuinely interested in the purchase of chemicals." The volume is 200 pages and cloth bound. Requests for copies should go to the association at Cecil Chambers, 86 Strand, London W.C. 2.

•

Magnetic Liquid Gage

The Jefferson Gage & Valve Co., Burlington, Mass., has announced a new magnetic gage for the observation of liquid levels. Especially designed for use where ordinary glass, gaskets, and threads cannot be tolerated (due to inflammable or explosive conditions) the scale consists of a series of edge-magnetized wafers which are attracted to each other to give a continuous scale.

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Who's Who in the Aerosol Industry

Sylvan Lefcoe, president of Par Industries, Inc., Los Angeles custom filler, is a pioneer of the industry in the West. During the early days of aerosols, while president of a household chemical distributing firm, he saw the possibilities of pressure cans and was one of the first on the West Coast to package chemical specialties, paints, insecticides, and room deodorants in aerosol cans.

His early training was in law and he practiced as an attorney in Philadelphia from 1931 to 1945. He entered the manufacture of sportswear about 1945. He began his career with Par Industries in 1952 as secretary-treasurer, and became president in 1954. This year he has been supervising an expansion program for his firm, which included larger quarters and faster equipment.

He is a graduate of Girard College, Wharton School of Finance and Commerce of the University of Pennsylvania, and the Temple University Law School. At Law School he was chancellor of the Honor Society, president of the Law Academy of Philadelphia, and case editor of the *Law Quarterly*. He became an attorney for the Revenue Department of Pennsylvania, remaining in that position until 1935.

With Par Industries, in addition to his business interests, he is active in civic affairs, charities, and golf. Such institutions as the Big Brother Association occupy much of his time away from business.

A Correction: In the September issue, in a biography of Victor Di Giacomo (of Givaudan-Delawanna) we reported that Mr. DiGiacomo had helped set up his company's aerosol laboratory "in 1956." Actually, Mr. DiGiacomo set up Givaudan-Delawanna's aerosol laboratory a full ten years previous to the date—in 1946—and can therefore lay claim to having been one of the earliest in the field of perfuming of aerosol products—The Editor.

At the . . .

CSMA LUNCHEON IN NEW YORK

Frederick Lodes (Lodes Aerosol Consultants), and William Remington (Peerless Tube).

D. J. Templeton (Stanley Home Products), Gerald Froot (McLaughlin Gormley King), Jack Schlossman (Aerosol Research), Sig Was (VCA).

Victor DiGiacomo (Givaudan-Delawanna), and Dr. Francis Mina (Lodes Aerosol Consultants).

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Aerosol Paint Valves

(*From Page* 71)

tion. The valve is free from exposed rubber parts—in fact, the only rubber in it is the small gasket which is completely enclosed in metal. The valve seat itself is polyethylene, which is impervious to most solvents with the exception of the very high boiling petroleum distillates. The wide, flat, plastic head and extremely short stroke (1/32") make it easy to operate."

Precision Valve's "Model 1B-NB" is termed "An extremely suitable unit for aerosol paints. . . . This valve has been found to minimize the common problems encountered with paints, including clogging, surface over-running, and excessive flammability. It has been observed that paint cans containing these valves can be operated with no difficulty on standing several months after initial actuation. This indicates no clogging problems in either valve or actuator."

Aerosol Research's "Model AR-74," which works with either cold or pressure filling, is reported to have no internal metering, since both primary and secondary meterings are located right in the tip itself. "As a result, the manufacturer states, the containers are virtually clog-proof. The tip stays on tight, will not loosen from chemical reactions. In pressure filling the AR-74 has one definite advantage. Having no internal metering, the valve is literally 'wide-open' for fast filling."

Newman-Green's "Model B-14-1" is described as a valve that will handle either pigmented or metallic-based enamels, lacquers, and all types of plastics. "The outstanding feature is that there are no small orifices in the lower (and inaccessible) part of the valve. The entire metering feature is incorporated in a removable and interchangeable spray tip. Should the valve ever clog, it's a simple matter to immerse the spray tip in paint solvent, clean out the two metering openings in the tip, and replace it in the lower portion of the valve. One of the largest companies marketing aerosol paints is using this valve. They report it has cut operating complaints to a fraction of their previous number."

Aerosol Overseas

(*From Page* 79)

we reach beyond our grasp. So far as our push-button aerosol pharmaceuticals are concerned, we want to give man a less expensive and more effective remedy for all that ails him, including his mental ills." So saying, we were able to meet on a more agreeable plane, and then the questions began.

"But the propellant gas," asks the one, "does it not ruin the remedy? When inhaled, does it not lie in the lungs because of its heavier than air weight?" The other expressed fear about explosions and also higher costs. We explained that in the UK, for example, a confiscatory purchase tax does not apply to medicines and that aerosol remedies probably end up being less expensive than pills or injections. The fact that Bayer, Leverkusen, and other leading European pharmaceutical houses are making experiments and running tests interests them very much, and slowly opposition noticeably faded and we were asked for reference articles and more detailed general information. They agreed about effective preservation, non-contamination, potency stability, unimpaired sterility and then became excited about the possibilities of pharmaceutical aerosols, completely forgetting that it is strictly an American idea. They quickly became the same kind of converts as those who joined the Crusades.

In the field of medicinal aerosols, the U. S. may plow the first furrows, but we firmly believe that it will be the European scientists who eventually open the doors. Already, they are ahead in certain kinds of cosmetics (their female still likes to be captured, not conquered). And for the sick and ailing what has the U. S. to compare with Lister, Pasteur, Hahnemann, Freud, Jung and all the others in all the fields which spell health and well being? ☆

Merck Pushes Gibrel Research

Merck & Co., Inc., Rahway, N. J., has established more than 30 new grants-in-aid at leading agricultural research centers to speed up investigative work on gibberellic acid, the chemical compound recently demonstrated to be capable of doubling and tripling growth of several kinds of plants.

The program, which supplements the company's own extensive research, consists of funds, technical material, and commercial-type formulations. The grants were established throughout the country, the Merck announcement said, because of variations in growing conditions and the need for specific knowledge upon which recognized agricultural scientists in different states can base practical recommendations.

Merck, which makes the product under the name "Gibrel," predicts that its increased use in aerosol containers may cause a substantial increase in the general aerosol home garden market. The product causes many desirable effects in seeds and growing plants (when used in accordance with recommended garden practices), is apparently compatible with most commonly-used chemicals, and is also non-toxic to plants and animals. A number of aerosol packagers are already marketing gibberellic products.

Cosmetic Bill

(*From Page 67*)

Any person who objected to a regulation would be allowed 30 days to file an objection with the secretary and request a hearing.

Mr. Mayham pointed out that no action on the bill would be possible until the next session of Congress, and that the industry strongly opposed identical bills by Rep. James J. Delaney (D., N.Y.) and Rep. Leonor K. Sullivan (D., Mo.). Mr. Mayham declared that both of these last bills are "highly objectionable, both from the standpoint of public protection and from the standpoint of the industry."★

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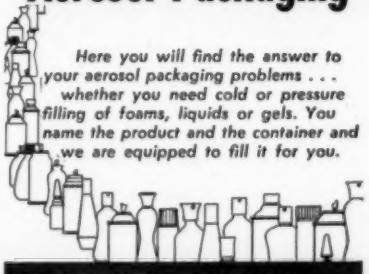

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FILLS ALL PRODUCTS

WESTERN FILLING CORPORATION
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Aerosol Valves

(*From Page* 57)

million units per year has required the integrated effort of many people and many industries, but the one part of the industry which had absolutely no previous counterpart in other fields is the valve manufacturer. That the job has been done at all seems nearly incredible when all of the problems are considered, but the fact that quality has continued to increase and prices have steadily decreased makes the aerosol valve industry a modern production miracle.★

Safety Record

(*From Page* 58)

by declaring that the industry's insuror's recognize well the good safety record enjoyed by the aerosol industry. "We have only two industry members who do not consider their relations with their insurors good to excellent. Only three industry members have any rating of their insurance other than the lowest applicable. All these insurance considerations apparently relate to public liability as well as fire and extended coverage. We feel that these insurance conditions reflect the safety of the aerosol industry in all its phases, and thus, confirm our own surveys."

He paid tribute to the "conscientious effort on the part of manufacturers to guard against hazard," as well as to "government regulation through the ICC and the USDA, self-regulation and establishment of safety standards by the industry trade association (CSMA), and painstaking care in following all prescribed safe practices in each aerosol manufacturing plant."★

Food Aerosols

(*From Page* 44)

spoilage agents in these products would be molds, yeasts, or the lactic bacteria. These bacteria are generally destroyed with a closing temperature of 190°F., assuming that

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raw product does not have an abnormally high bacterial population.

The ConCan researchers point out the hot fill-hold gas procedure could possibly be replaced by one which would involve heat sterilization of the packed product. It is conceivable that the process of heating the closed gassed container, for required time at temperatures of 130° to 150°F. would have the following advantages:

(1) The sealed product would be adequately sterilized, with a minimum of oxidation or loss of product color or flavor.

(2) The propellant and valve components would be adequately sterilized — not a sure accomplishment in the hot filling method.

The use of a heating period after crimping might have disadvantages, including:

(1) The container would be subjected to higher than normal internal pressures during the process.

(2) The time "in line" would possibly be greater than with a hot fill.

2. *Those Requiring Refrigerated Storage*—Due to their high pH and product constituents, many foods are excellent media for the growth of spoilage bacteria and cannot be sterilized by heat without seriously affecting their quality. Such products as whipped creams and toppings necessarily have relatively short bacteriological shelf-life and are usually merchandised under refrigerated temperatures. It is possible to acquire longer periods of bacteriological stability by the use of aseptic canning procedures. One whipped cream product packed in this manner with a foam type valve has been very successful commercially. However, due to extra equipment costs and added complications that might be involved with a spray type valve, extended use of this procedure is not likely in the near future.

3. *Those that require no Special Treatment to Insure Preservation*—Food products such as salad oils, shortening, and other oil base products require no active measures to insure bacteriological stability.

Though the Food and Drug Administration has no specific statutes governing sanitary requirements for the pressurized food packager, the FDA regulation does state, "A packing line is satisfactory if the food product in no way becomes adulterated." Section 402 of the General Regulations of the Food, Drug & Cosmetic Act of 1953 states that food shall be deemed adulterated:

"1. If it bears or contains any poisonous or deleterious substance which renders it injurious to health.

"2. If it consists in whole or in part of any filthy, putrid, or decomposed substance, or if it is otherwise unfit for food.

"3. If it has been prepared, packed, or held under unsanitary conditions whereby it may have become contaminated with filth, or rendered injurious to health."

Freight Tariff No. 9 of the Interstate Commerce Commission, which deals with both food and non-food aerosols, takes cognizance of the critical delicacy of food products, and states "The container used for food stuffs must be capable of withstanding without bursting a pressure of two times the pressure of the contents at 70°F." The pressurized food containers do not require testing at 130°F., as is stipulated for non-food aerosols.

The ICC regulations do not limit the size of food containers to 16 ounces, as they do for non-food containers. Because of the important relationship between product and package costs in the food field, the trend is expected to be toward larger can sizes. The 12-, 16-ounce, and even larger size cans are expected by Continental Can to be most popular with packagers.

Continental's experiments, conducted during the past 12 months, would seem to indicate that it *is* indeed possible to package a variety of food products in spray-type containers employing *permissible* compressed propellants. With a successful reformulation of product and modification of available valves and actuators, no longer will the food industry be restricted to whipped creams and desert toppings in pressurized containers.★

New Aerosol Patents

The data listed below is only a brief review of recent patents pertinent to the readers and subscribers of this publication.

Complete copies of these patents may be obtained by writing to the publisher of this magazine, Aerosol Publications, Box 31, Caldwell, N. J., and remitting 50c for each copy desired. For orders received outside of the United States the cost will be $1.00 per copy.

2,801,880. HOPPER SPRAY GUN. Patent issued August 6 to Fred Rienecker, San Francisco, Calif.

A spray gun comprising a cylindrical housing having an enlarged forward end, a hopper mounted over the forward end and communicating therewith, a grip depending from the housing and having an air conduit therein, a valve stem revolvable and slidable in the housing, and having an axial passage therein, with a lateral port for the passage operable for communicating with the conduit, and a nozzle at the front end of the housing in opposing relation to the valve stem, whereby compressed air fed through the grip conduit is made to be ejected through the passage in the stem and the nozzle while entraining material from the hopper.

2,802,608. SEALED VALVE DISPENSING DEVICE. Patent issued August 13 to Benjamin F. Gassaway, Milwaukie, Oregon, assignor of one-half to Joseph A. Hull, Portland, Oregon.

A dispensing spout operable between an open and a closed position, comprising a pair of mated closure elements arranged in face to face relationship and having coinciding peripheral margins, at least one of said closure elements being an elastic collapsible suction cup, a skirt pendent from said mated closure elements, the lateral peripheral margins of said mated closure elements being relatively stiff and in sealing abutment and the end peripheral margins normally being spaced to define a longitudinal, end to end, dispensing passage intermediate the closure elements, through said skirt, and concordant with said open position, the end peripheral margins at one end of said mated closure elements being joined by a thin imperforate membrane rupturable by digital, externally applied pressure producing distortion of said opposed lateral peripheral margins.

2,802,696. SPRAY CAP AND BOTTLE. Patent issued August 13 to Franco Galeazzi, Milan, Italy.

A bottle adapted to contain liquid under pressure and having an integral neck portion on which a spray cap is fitted for sealing the bottle while dispensing the liquid from the bottle, said spray cap including an inwardly pressable solid needle and valve unit disposed within the outer end portion of the neck portion; means sealing the bottle until the needle is initially pressed and comprising a sealing member having concentric, radially spaced inner and outer walls adapted to clamp on the inside and outside of the neck portion and connected at their outer ends by a flat, annular wall overlying the outer end of the neck portion and underlying the cap, said inner wall terminating in a closed coaxially reduced thin walled rigid, centrally disposed end which underlies the inner end of the needle and is adapted to be perforated thereby when the needle is initially pressed, said needle having an inner pointed end which is housed within the end until it is initially pressed to perforate the end and the tube fitted on and supported by the rigid end of the inner wall and extending through the neck portion to the interior of the bottle.

2,802,772. AEROSOL COMPOSITIONS: BOMB AND PROCESS FOR TREATING FLOCKS OF CHICKENS. Patent issued August 13 to John A. Elder, Jr., Plainfield, N. J., assignor to Merck & Co., Inc., Rahway, N. J., a corporation of New Jersey.

A process for treating flocks of chickens having respiratory infections which comprises releasing to the atmosphere surrounding the chickens a composition under pressure greater than atmospheric comprising finely divided particles of an antibiotic selected from the group consisting of streptomycin, dihydrostreptomycin and salts thereof wherein all of the particles are substantially below ten microns in size and a non-toxic pressure generating propellant thereby widely dispersing the finely divided particles of antibiotic in the atmosphere.

2,803,499. SPRAY NOZZLE AND METHOD OF CLEANING SAME. Patent issued August 20 to Francis H. Coyette, Worcester, and John E. Grenier, Leicester, Mass., assignors to Lodding Engineering Corporation, Worcester, Mass., a corporation of Massachusetts.

In combination with a spray pipe, a spray nozzle projecting through the wall of said pipe, said spray nozzle comprising a tubular body secured near its outer end to the wall of the pipe, said body being open at its inner end and closed at its outer end except for a central bore of reduced diameter, a piston slidably fitted in said tubular body, said piston having a tubular piston rod open at both ends and slidably fitted in said central bore of reduced diameter a bracket projecting from the outer end of said body, said bracket including a shelf extending across the axis of said rod and engageable by the outer end of the rod, and a spring pressing said piston toward the inner end of said body.

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2,803,383. Wire Holder for Pressure-Actuated Canisters. Patent issued August 20 to Benjamin Dickman and Max Dickman, Philadelphia, Pa.

An all-wire holder and actuator for canisters containing fluids under pressure that have a discharge orifice normally closed by an element that is positioned yieldingly outwardly, comprising a member having a reversely looped depending handle portion, and a forwardly extending substantially J-shaped hook portion adapted to yieldingly receive in its hooked end the discharge end of a pressure canister, in combination with an initially separate relatively movable substantially L-shaped member pivotally connected adjacent to its angular mid-section to the forwardly extending portion of said first member, and its self-comprising a depending manually engageable portion generally paralleling said handle portion, and a forwardly extending terminal portion in engagement with the closure element of such canister, so that shifting of said trigger portion towards said handle portion causes said forward portion to depress such closure element and permit the escape of the canister's contents.

2,804,102. Automatic Pressure Container Vacuumizing, Filling, and Charging Machine. Patent issued August 27, 1957 to Ralph D. Cooksley, Morristown, and William M. Lester, Mountainside, N. J.

A machine for filling and charging pressure containers having a valve end for charging and dispensing a liquid product and a volatile propellant, comprising a filling head having a main body, orifice means in said body through which the product and propellant are dispensed to a container, means for positioning a container with its valve end adjacent said orifice, said filling head body having a small feed chamber adjacent to said orifice means and a plurality of supply chambers in communication with said small feed chamber, valve means associated with each of said supply chambers for controlling the flow of fluid between each supply chamber and said small feed chamber, means for supplying the liquid product under pressure to one of said supply chambers, means for supplying the propellant under pressure to another of said supply chambers, means for successively actuating the valve means of said supply chambers, said small feed chamber being of cylindrical shape and leading to said orifice means, said supply chambers nested about and converging toward the feed chamber, said supply chambers further extending radially and at an inclined angle to the axis of said feed chamber.

2,802,887. Hydrogenation of Chlorotrifluoroethylene. Patent issued August 13 to Charles B. Miller, Morris Plains, John H. Pearson, Glen Rock, and Lee B. Smith, Woodbridge, N. J., assignors to Allied Chemical & Dye Corporation, New York, a corporation of New York.

The process for making $CHF{=}CF_2$ from $CCIF{=}CF_2$ which comprises introducing hydrogen and $CCIF{=}CF_2$ into a reaction zone, regulating molecular proportions of the hydrogen-$CCIF{=}CF_2$ mixture in the reaction zone to substantially in the range of 0.4-0.75 mol of hydrogen to one mol of $CCIF{=}CF_2$, heating said mixture at temperature substantially in the range of 90-150° C. while in the presence of a palladium on activated carbon catalyst, and recovering $CHF{=}CF_2$ from the resulting reaction products.

Trade Mark Applications

Applications for registration of the following trademarks were published in recent issues of the *Official Gazette* of the U. S. Patent Office. In not all cases are there strictly aerosol trademarks, however many of the products listed below come within the category of those for which a possible future use in aerosols is foreseen.

Sentry, in unfilled script across a triangle attached to a wooden soldier, for moth crystals, household room deodorant sprays, germicides, and urinal blocks. Filed Feb. 13, 1956 by Edward I. Ross, d.b.a. Sentry Products Co., Boston, with first use claimed in the year 1924.

Shurspray, in capitals, for detergent cleaner, particularly suitable for cleaning evaporators and vacuum pans. Filed Feb. 25, 1957 by The Diversey Corp., Chicago, claiming first use Jan. 11, 1956.

Evervess, in capitals, for hair setting spray, hair dressing, and cold wave solution. Filed Mar. 21, 1956 by Rilling Dermetics Co., New York, reporting first use Sept. 23, 1955.

Ceramix, in capitals, for sprayable coating. Filed Mar. 18, 1957 by Preco Chemical Corp., Farmingdale, N. Y., with first use claimed Mar. 4 of same year.

Fresh Magic, in capitals, for deodorants for industrial or household use. Farr-Rocard, Inc., New York, N. Y. filed application July 31, 1956 and reported first use Dec. 20, 1954.

Bouffante and Batiste in capitals, for cologne, issued to Parfums Ciro, Inc., New York. Both filed June 4, 1956 with first use May 31 of same year.

Lady Lavender, in script, with scroll frame, for room deodorant. Filed Mar. 20, 1957 with first use claimed Dec. 12, 1956.

Spray-Shield, in italic, for anti-perspirant. Filed May 9, 1956 by Connecticut Chemical Research Corp., Bridgeport, claiming first use Oct. 10, 1955.

W. Alec Jordan
Chemical Business Counsel

- Marketing Analyses
- Product Development
- Evaluation of Purchasing Determinants

270 Park Ave., New York 17, N. Y.
PL 5-9345

Angel-Net, Angel-Set, and Angel-Shine, in capitals, for cosmetic facial and body creams, cosmetic facial and body lotions, lipsticks, rouge, facial and body powders, facial lotions and liquids used as a foundation base and also as a powder substitute, hair conditioning creams and lotions, hair tonic, hair dressing creams and lotions, and colognes. All three filed June 21, 1956 by Chesebrough-Pond's Inc., New York, claiming first use May 21 of same year.

Angel-Mist, in capitals, for all of the above. Filed Apr. 10, 1956 by Chesebrough-Pond's Inc. reporting first use Jan. 20, 1956.

Anna Wade, in capitals, for cosmetic skin lotions and creams, perfumes, body deodorant in cream, liquid, and stick form, sachet powder and cream for the skin, cleansing cream. Filed Feb. 20, 1956 by Morton Manufacturing Corp., d.b.a., Anna Wade, Lynchburg, Va., with first use claimed for Jan. 16 of same year.

Mona Ray, in capitals, for cologne, perfume, face powder, dusting powder, bath crystals, lotions for skin and hands, cosmetic skin creams, and lipstick. Filed Dec. 7, 1956 by Mona Ray Laboratories, Inc., Memphis, Tenn., claiming first use in Feb. 1932.

Randox, in capitals, for chemical toxicants for use in making or formulating agricultural insecticides, fungicides, and herbicides; and formulations of agricultural insecticides, fungicides and herbicides containing chemical toxicants. Filed Jan. 28, 1957 by Monsanto Chemical Co., St. Louis, with claim of first use (on chemical toxicants) May 5, 1948.

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Pennsalt Sells Water Co.

Pennsalt Chemicals Corp., Philadelphia, has signed an agreement for the sale of its water properties, serving the communities of Natrona and Natrona Heights in western Pennsylvania to the General Waterworks Corp. system. The properties, which include the filtration plant and distribution and transmission systems, are to be acquired by the Clearview Water Supply Co., a subsidiary of General, from Pennsalt's wholly-owned subsidiary, Natrona Water Co.